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THE
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MEDICO-CHIRURGICAL
REVIEW.

EDITED BY

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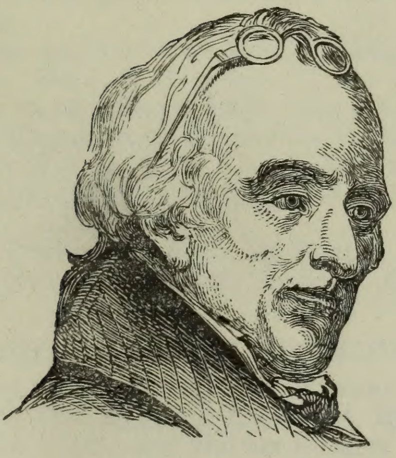

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NORTH AMERICAN
MEDICO-CHIRURGICAL REVIEW.

Vol. II.] JANUARY, 1858. [No. 7.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

Art. Page
I.—1. Elements of Pathological Anatomy. By S. D. Gross, M.D. . 1
2. Rudiments of Pathological Anatomy. By Carl Wedl, M.D. . 1
3. The Pathological Anatomy of the Human Body. By Julius Vogel, M.D. 1
4. Anatomical Description of the Diseases of the Organs of Circulation. By C. E. Hasse, M.D. 1
5. A Manual of Pathological Anatomy. By C. Rokitansky, M.D. 2
6. A Compendium of Pathological Anatomy. By A. W. Otto, M.D. 2
7. A Treatise on Pathological Anatomy. By G. Andral, M.D. . 2
8. A Treatise on Pathological Anatomy. By W. E. Horner, M.D. 2
9. Histoire Anatomique des Inflammations. Par A. N. Gendrin, D.M., etc. 2
10. Histoire des Phlegmasies, etc. Par F. J. V. Broussais, D.M. . 2
11. Essai sur l'Anatomie Pathologique. Par Jean Cruveilhier, D.M., etc. 2
12. Anatomie Pathologique. Par Laennec & Bayle (Dictionnaire de Médecine) 2
II.—1. The Botanical Text-Book. By Asa Gray, M.D. 22
2. First Lessons in Botany. By the same author 22
3. Genera of the Plants of the United States. By the same author. 22
4. Manual of the Botany of the Northern United States. By the same author 22
III.—The Cattle Plague and Diseased Meat, in their relations with the Public Health. By J. S. Gamgee 35
A Second Letter on the same subject. By the same author . . 35
IV.—A Catalogue of Preparations Illustrative of Diseases of the Ear. In the Museum of Joseph Toynbee, F.R.S., etc. 42
V.—A New Description of the Entire Body (in Chinese.) By Benjamin Hobson, M.D. 43
VI.—A Dictionary of Medical Science. By Robley Dunglison, M.D. . 44
VII.—General Therapeutics and Materia Medica. By Robley Dunglison, M.D. 44

ORIGINAL COMMUNICATIONS.

I.—Some Remarks on Cataract. By C. S. Fenner, M.D. 45
II.—Convulsions: their Pathology and Treatment. By B. M. Wible, M.D. 56
III.—Adaptation of the Clamp and Button Sutures to Prolapse of the Vagina. By Horatio R. Storer, M.D. 64
IV.—Three Cases of Infantile Apoplexy. By J. H. Wythes, M.D. . 70
V.—Congenital Hydro-Cerebral Hernia. By H. P. Ayres, M.D. . 73
VI.—Case of Fracture of the Skull and Wound of the Brain. By E. Wallace, M.D. 75
VII.—Case of Luxation of the Knee-Joint. By C. Hixon, M.D. . . 76
VIII.—Introduction of the Probang into the Larynx. By F. D. Leute, M.D. 78

ART. PAGE
IX.—Plastic Operation upon the Ear. By J. PANCOAST, M.D. . . . 78
X.—Bony Tumor of the Scrotum. By J. G. KERR, M.D. . . . 79
XI.—Hospitals of Paris. By RICHARD J. DUNGLISON, M.D. . . . 81
XII.—Mortality of Philadelphia. By WILSON JEWELL, M.D. . . . 86
XIII.—Proceedings of the Pathological Society of Philadelphia: Fatty Degeneration of Liver—Fistula of Gall-Bladder—Gangrene of Bladder—Encephaloid Tumor of Thigh—Primary Cancer of Pancreas—Bony Tumor of Scrotum—Cancer of Liver, and other Abdominal Viscera—Softening of Stomach—Fungus of Testicle—Injury of Shoulder-Joint—Ovary containing Bone . . . 93

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on the Progress of Physiology and Anatomy. By S. WEIR MITCHELL, M.D. 105

BI-MONTHLY PERISCOPE.

ANATOMY AND PHYSIOLOGY.

1. Physiology of the Large Intestine 131
2. Histology of the Nervous System 133
3. Effect of Red Blood on the Vital Properties of the Contractile and Nervous Tissues 135
4. Structure of the Nervous Centres 136

SURGERY.

1. Escharotic Treatment of Cancer 138
2. Excision of Joints 142
3. Excision of the Knee-Joint 146
4. Operation for Imperforate Rectum 151
5. Laceration of Urethra by Muscular Contraction 154
6. Ligature of Dorsalis Penis Artery for Hypertrophy of Prepuce . . 155
7. Removal of Warts by Chromic Acid 156
8. Ligature of Common Carotid Artery in Epilepsy 157
9. Extraction of a Foreign Body from Œsophagus 158
10. Accidental Severance of Common Carotid Artery—Recovery . . 159
11. Large Uterine Polypus removed by the Ecraseur 160
12. Cancer and its Treatment 161

MATERIA MEDICA AND THERAPEUTICS.

1. Action of Cod-liver Oil 162
2. Oil of Tansey 165
3. Arsenic in Cholera 165

PATHOLOGY AND MEDICINE.

1. Dysentery a cause of Hepatic Abscess—Twenty-two Cases . . . 169
2. Secretion of Urinary Constituents from Skin 174
3. Intestinal Obstruction, with Operation 176

EDITORS' TABLE.—Quack Advertisements in Religious Newspapers. . 179
Solutions and Deposits of Mineral Springs. 186
Coffee in the Turkish Fashion. 191
Jenner Monument. 192
Biological Society of Philadelphia. 193
New Physiological Journal by Brown-Séquard. 193
Cholera. 194
Suit for Malpractice. 195
Pathology versus Phrenology 196
Prize Essays of the American Medical Association 197

NECROLOGICAL NOTICES.—Dr. Abraham Stout. 197
Dr. S. P. Hullihen. 199
Dr. W. H. Deadrick. 205
Dr. Samuel Metcalfe 206
BI-MONTHLY BIBLIOGRAPHICAL RECORD 208

LIST OF COLLABORATORS.

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John L. Atlee, M.D., President Pennsylvania State Medical Society.

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NORTH AMERICAN
MEDICO-CHIRURGICAL REVIEW.

Vol. II.] MARCH, 1858. [No. 2.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

Art. Page
I.—A Practical Treatise on Diseases of Children. By J. Forsyth Meigs, M.D. 209
II.—1. Researches in Physiology and Pathology. By E. Brown-Séquard, M.D. 222
2. Researches on Epilepsy. By the same author . . . 222
3. Essays on the Secretory and Excito-Secretory System of Nerves. By Henry F. Campbell, M.D. 222
III.—Diseases of the Alimentary Canal. By S. O. Habershon, M.D., etc. 236
IV.—Treatise on Midwifery, etc. By P. Cazeaux 252
V.—Human Histology. By E. R. Peaslee, M.D. 260
VI.—Pathological Chemistry. By MM. Becquerel and Rodier . 263
VII.—Manual of Detection of Poisons. By Dr. F. Jul. Otto, M.D. . . 264
VIII.—Botanical Text-Book. By Asa Gray, M.D., etc. . . . 265

ORIGINAL COMMUNICATIONS.

I.—Prominence of the Eyeball, etc., after the Ordinary Operation for Strabismus; with description of a New Pair of Scissors for Performing the Sub-conjunctival Operation. By Addinell Hewson, M.D., etc. 266
II.—On the Injection of Urea and Other Substances into the Blood. By W. A. Hammond, M.D. 287
III.—Epidemic Dysentery By W. J. Johnson, M.D. 293
IV.—Medullary Sarcoma of the Liver. By John P. Kluge, M.D. etc. 307
V.—Compound Comminuted Fracture of the Humerus. By J. Meckley, M.D. 310
VI.—Pueperal Convulsions from Gastric Irritation. By J. Levergood, M.D. 311
VII.—Proceedings of the Pathological Society of Philadelphia . . 312
VIII.—Mortality Statistics of the U.S. Census for 1850. By E. Read, M.D. 334

ART. PAGE

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on Practical Medicine. By AUSTIN FLINT, M.D., Professor of Pathology and Clinical Medicine, University of Buffalo . . 341

BI-MONTHLY PERISCOPE.

PHYSIOLOGY.

1. Functions of the Right Auricle 378
2. Action of the Pancreatic Juice and Bile 379

SURGERY.

1. Collodion in Orchitis 379
2. Treatment of Primary Syphilis 380
3. Syphilitic Inflammation of the Retina 380
4. Diagnosis of Hydrocele 381
5. Reduction of Hernia by Compression 382
6. New Treatment for Acute Glaucoma 382

PATHOLOGY AND MEDICINE.

1. Negroes not exempt from Southern Epidemics 383
2. Clinical Observations on Epilepsy 384

THERAPEUTICS.

1. Antidote to the Poison of the Rattlesnake 385
2. Therapeutic Action of, and New Mode of Administering Chlorate of Potash 387

EDITORS' TABLE.—Suits for Malpractice 389
African Edibles 391
Thermal Springs 394
Monstrosity 397
New Medical Journal 397
Fusion 398
Prizes at the Académie de Médicine 398
Editorial Change 398
Animal Signatures 398
Natural Anæsthesia 399
Hippophagy 399
Quarantine Convention 399
Bi-Monthly Bibliographical Record 400

LIST OF COLLABORATORS.

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NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

Vol. II.] MAY, 1858. [No. 3.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

ART. PAGE

I.—A Manual of Medical Diagnosis. By A. W. Barclay, M.D. . . . 401

II.—Handbuch der Speciallen Pathalogie und Therapie. By Prof. R. Virchow 413

III.—The Principles and Practice of Obstetrics. By Henry Miller, M.D. 436

IV.—The Dispensatory of the United States. By George B. Wood, M.D., and Franklin Bache, M.D. 465

V.—Plates Illustrative of Wilson on Diseases of the Skin . . . 466

VI.—The Diseases of Children. By Fleetwood Churchill, M.D. . 466

ORIGINAL COMMUNICATIONS.

I.—On the Perceptive Power of the Spinal Cord, as manifested by experiments on Cold-blooded Animals. By George Paton, M.D. 467

II.—Observations on the Supposed Relations between Epizootics and Epidemics, and the Effects which Diseased Meat may have on Human Health. By George Sutton, M.D. 483

III.—Practical Miscellanies on Diseases of Children. By L. W. Mauthner, M.D. 504

IV.—Proceedings of the Pathological Society of Philadelphia . . 506

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on Practical Surgery. By Edward Hartshorne, M.D., One of the Surgeons of Wills' Hospital, Philadelphia 536

BI-MONTHLY PERISCOPE.

PRACTICAL MEDICINE.

1. On Emboli 568

2. Valerianate of Ammonia successfully used in Neuralgia . . . 570

PAGE

MATERIA MEDICA AND THERAPEUTICS.

On the Medicinal Action of Lupuline 570

SURGERY.

1. Case of Imperforate Anus 575
2. Large Popliteal Aneurism treated by Pressure, and afterwards by Ligature 579
3. Malignant Tumor near the Breast at an unusually Early Age . . . 580
4. Excision of the Ankle-Joint 580
5. Collodion and Castor Oil as an Artificial Cuticle 580

OBSTETRIC MEDICINE.

On Secondary Affections of the Joints in Puerperal Women. . . . 581

EDITORS' TABLE.—Medical Students in the United States during the Session of 1857–58 585
  Medical Students Abroad 585
  Philadelphia College of Pharmacy 585
  Resignations and Appointments in Medical Schools 585
  The Medical and Surgical Reporter 586
  Journal de la Physiologie de l'Homme et des Animaux . . . 586
  American Medical Association 586
  American Veterinary Journal 586
  The Ecraseur in Ovariotomy 587
  Accidents of Knighthood 587
  Appointment of Professor Dickson 588

NECROLOGICAL NOTICES.—Professor J. K. Mitchell 588
  Dr. Benjamin Travers 590
  Dr. J. K. Walther 591
  Dr. Schœpf Merei 591
  Mons. L. Baudens 591
  Dr. Forbes Royle 591

BI-MONTHLY BIBLIOGRAPHICAL RECORD 592

LIST OF COLLABORATORS.

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NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

Vol. II.] JULY, 1858. [No. 4.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

Art. Page
I.—Lectures on the Diseases of Women. By Charles West, M.D. . 593
II.—Leçons sur le Chancre. By Dr. Ricord 606
III.—Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M.D. 618
IV.—Silver Sutures in Surgery. By J. Marion Sims, M.D. . . 635
V.—Lectures on the Principles and Practice of Physic. By Thomas Watson, M.D. 653
VI.—Contributions to Operative Surgery and Surgical Pathology. By J. M. Carnochan, M.D. 656

ORIGINAL COMMUNICATIONS.

I.—Practical Observations on the Nature and Treatment of Tuberculosis of the Hip-Joint. By S. D. Gross, M.D. . . . 658
II.—Removal of an Ovarian Tumor, in which the Écraseur was used. By John L. Atlee, M.D. 698
III.—Experiments in Reference to Section II. of a Paper in the "May No. of the Review," on "The Perceptive Power of the Spinal Cord." By George R. Paton, M.D. 703
IV.—Proceedings of the Pathological Society of Philadelphia . . 705

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on Practical Surgery. Part II. By Edward Hartshorne, M.D., One of the Surgeons of Wills' Hospital, Philadelphia . . . 732

BI-MONTHLY FOREIGN ABSTRACTS.

Novelties in Medical, Surgical, Obstetrical, and Chemical Science; chiefly from the French, German, and Italian. By Emil Fischer, M.D.

PHYSIOLOGY.

I.—Experimental Researches on the Physiological Properties and Uses of the Red and of the Black Blood. By E. Brown-Séquard, M.D. . 761

ART. PAGE
II.—Memoir on the Effects of Extirpation of the Pancreas. By Prof. BÉRARD and M. COLIN 765
III.—On the Nervous Centres controlling the Contraction of the Uterus. By O. SPIEGELBERG, M.D. 767
IV.—On the Peristaltic Motion of the Intestines. By O. SPIEGELBERG, M.D. 769

PATHOLOGY.

V.—On Spontaneous Primary Pyæmia. By Prof. C. A. WUNDERLICH 770

EDITORS' TABLE.—American Medical Association 775
Medical Society of the State of Pennsylvania 778
Consultations with Homœopaths 779
Resignations and Appointments in Medical Schools 780
Shelby Medical College 781
Inauguration of the Jenner Monument 781
Bi-Monthly Abstracts 781
Junior Editor of the Review 782

NECROLOGICAL NOTICES.—Dr. Robert Hare 782
Dr. Johannes Muller 783
Prof. L. W. Mauthner 783
Dr. William Gregory 783
Dr. Robert Harrison 783

BI-MONTHLY BIBLIOGRAPHICAL RECORD 784

LIST OF COLLABORATORS.

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NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

Vol. II.] SEPTEMBER, 1858. [No. 5.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

ART. PAGE

I.—Urinary Deposits; their Diagnosis, Pathology, and Therapeutical Indications. By GOLDING BIRD, M.D. 785

II.—Of Nature and Art in the Cure of Disease. By SIR JOHN FORBES, M.D. 800

III.—The Institutes of Medicine. By MARTYN PAINE, M.D. . . . 807

IV.—A Manual of Psychological Medicine; Including the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity. By JOHN CHARLES BUCKNILL, M.D., and DANIEL H. TUKE, M.D. 826

V.—Outlines of a Course of Lectures on the Principles and Practice of Surgery. By E. GEDDINGS, M.D. 843

VI.—Evil Results of Over-Feeding Cattle. By FREDERICK JAMES GANT, M.R.C.S. 846

VII.—Elements of Inorganic Chemistry. By THOMAS GRAHAM, F.R.S.L. and E. 848

VIII.—Handbuch der Praktischen Chirurgie für Artze und Wundärtze. By VICTOR VON BRUNS, M.D. 848

IX.—A Treatise on Rheumatic Gout. By ROBERT ADAMS, M.D. . . . 850

ORIGINAL COMMUNICATIONS.

I.—A Case presenting Choreic Symptoms, Terminating in Death. By O. C. GIBBS, M.D. 851

II.—Phenomena of the Capillary Circulation. By AUSTIN FLINT, Jr., M.D. 861

III.—Proceedings of the Pathological Society of Philadelphia. . . 867

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on Materia Medica and Therapeutics. By JOHN BELL, M.D. PART I. 910

BI-MONTHLY FOREIGN ABSTRACTS.

SURGERY.

.—A New Method of Amputation. By M. MAISONNEUVE. . . . 947

.—On the Scooping out of Bones as a means of preserving their Shape and Functions. By Prof. SÉDILLOT. 948

ART. PAGE
III.—Observations on Hereditary Syphilis of the Bones and Cartilages. By Dr. SIGMUND. 949

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

IV.—On the Pathogeny of Hydrorrhœa of Pregnant Women. By Prof. C. BRAUN. 950
V.—On Amputation of the Neck of the Uterus in Prolapsus of this Organ. By C. MAYER, M.D. 951
VI.—On Linear Écrasement of the Cervix Uteri. By Dr. BRESLAU. . 952
VII.—Treatment of Engorgement of the Cervix Uteri with Ointment of the Chloroiodide of Mercury. By M. CH. BERNARD. . . 952
VIII.—Thrombosis of the Cerebral Sinuses in Children. By Dr. GERHARDT. 954

BI-MONTHLY PERISCOPE.

SURGERY.

Excision of Bones and Joints. 955

PRACTICE OF MEDICINE.

Observations on the Use of the Shower-Bath in Delirium Tremens. . . 960

OBSTETRICS.

1. On Menstruation during Pregnancy. 965
2. Observations on the Beneficial Effects of Pepsin in the Obstinate Vomiting of Pregnancy. 965
3. On the Carbonic Acid Gas Douche in Uterine Disease . . . 966
4. Laudanum Dressings in Painful Affections of the Uterus. . . . 967

EDITORS' TABLE.—Changes and Appointments in Medical Schools. . 969
Charleston Medical and Surgical Journal. 969
Shelby Medical College. 969
Triplets. 969
New Medical Journals. 970
Philadelphia Hospital, Blockley. 970
Naval Appointments. 970
Army Appointments. 970
Corn as an Antiperiodic. 970
Chair of Chemistry in the University of Edinburgh. . . . 971
Sir Benjamin Brodie. 971
The Bréant Prize. 971
Novel Cure for Phthisis, and a New Operation of Castration. . . 972
The College of Spirits in Paris 972
Monuments to Jenner. 974
To Correspondents. 974
Notice to Foreign Medical Journals. 974

NECROLOGICAL NOTICES.—The Late Sir Philip Crampton, M.D. . . 974
Dr. John Snow. 975
Professor Busch. 975

BI-MONTHLY BIBLIOGRAPHICAL RECORD. 976

LIST OF COLLABORATORS.

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MEDICO-CHIRURGICAL REVIEW.

Vol. II.] NOVEMBER, 1858. [No. 6.

CONTENTS.

ANALYTICAL AND CRITICAL REVIEWS.

Art. Page
I.—De la Prostitution dans la Ville de Paris, etc. Par A. J. B. Parent-Duchatelet. 977
II.—An Essay on the Pathology and Therapeutics of Scarlet Fever. By Caspar Morris, M.D. 1010
III.—The Uræmic Convulsions of Pregnancy, Parturition, and Childbed. By Carl R. Braun, M.D. 1020
IV.—On the Pathology, Symptoms, and Treatment of Ulcer of the Stomach; with an Appendix of Cases. By Wm. Brinton, M.D. 1028
V.—Ventilation in American Dwellings; with a Series of Diagrams presenting Examples in Different Classes of Habitations. By David Boswell Reid, M.D., etc. 1035
VI.—A Treatise on the Practice of Medicine. By George B. Wood, M.D. 1036
VII.—A Manual of Practical Medicine. By T. H. Tanner, M.D. . 1036
VIII.—The Physician's Visiting List, Diary, and Book of Engagements, for 1859. 1037

ORIGINAL COMMUNICATIONS.

I.—Observations on the Deaf and Dumb. By Richard J. Dunglison, M.D. 1037
II.—Surgical Cases. By A. Lopez, M.D. 1065
III.—Proceedings of the Pathological Society of Philadelphia. . . 1072

AMERICAN PROGRESS OF MEDICAL SCIENCE.

Report on Materia Medica and Therapeutics. By John Bell, M.D. Part II. 1079

BI-MONTHLY FOREIGN ABSTRACTS.

CHEMISTRY AND PHYSIOLOGY.

I.—Researches on the Chemical Composition of the Brain. By M. Müller. 1104
II.—On a New Basic Substance Extracted from Muscles. By A. Strocker. 1104
III.—Influence of the Spinal Marrow on the Brain. By Dr. Brown-Séquard. 1104
IV.—Measurement of the Sensibility in the Morbid State. By Dr. Brown-Séquard. 1105
V.—Serous Sac of the Middle Ventricle of the Brain. By Prof. Förster. 1105

ART. PAGE
VI.—Anæsthesia Universalis Peripherica. By Dr. BINZ. . . . 1106
VII.—Pericarditis, with Acute Fatty Degeneration of the Heart. By Prof. VIRCHOW. 1106
VIII.—Observations on Pulmonary Tuberculosis. By Prof. LEBERT. . 1107
IX.—1. Acute Yellow Atrophy of the Liver, with Icterus. By Dr. MUHLIG. 1108
2. Similar Case. By Prof. BAMBERGER. 1108
X.—On Nutmeg Liver. By Dr. ANT. REZZONICO. 1110
XI.—Observations on Cholera. By Prof. LEBERT. 1111
XII.—On Prolonged Constipation. By Prof. TEISSIER. Reported by Dr. COUTAGNE. 1113
XIII.—On the Observations of Temperature in Patients. By Prof. WUNDERLICH and Dr. MEYER. 1114

MATERIA MEDICA.

XIV.—Argenti Nitras in Oxyuris Vermicularis. By Dr. SCHULTZ. . 1116
XV.—Iodide of Potassium as Antigalactic. By Prof. ROUSSET. . . 1116
XVI.—Cerate of Opium in Carbuncle. By Dr. VON GUTZEIT. . . 1117

BI-MONTHLY PERISCOPE.

SURGERY.

1. Twelve Cases Illustrating the Treatment of Spina Bifida. . . . 1117
2. Account of some Trials made to facilitate the Removal of Stones from the Urinary Bladder. 1127

PRACTICAL MEDICINE.

1. An Account of some Cases of Scarlatina Anginosa successfully treated by Hot Packing 1129
2. Treatment and Clinical History of Asthma. 1134

OBSTETRIC MEDICINE.

1. A New Symptom of Rupture of the Uterus. 1137
2. Puerperal Convulsions. 1138
3. Statistics of Operative Midwifery. 1142
4. Influence of Pregnancy and Delivery upon Insanity. 1145

EDITORS' TABLE.—Allopathy—Allopathists. 1146
Craniography. 1148
Appointments in Medical Schools. 1149
New York State Inebriate Asylum. 1149
Contributions to Obstetric Jurisprudence. 1149
Correction. 1150
The Medical and Surgical Reporter. 1150
Vesico-vaginal Fistule in Europe. 1150
Ecraseur. 1151
The Pathological Society of Philadelphia. 1152

NECROLOGICAL NOTICES.—Mr. George Combe 1152
Dr. Edward Minturn. 1153

BI-MONTHLY BIBLIOGRAPHICAL RECORD 1154

Index to Volume II. 1155

LIST OF COLLABORATORS.

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JANUARY, 1858.

Analytical and Critical Reviews.

ART. I.—*Elements of Pathological Anatomy.* By S. D. GROSS, M.D. Professor of Surgery in Jefferson Med. College, and formerly Professor of Pathological Anatomy in the Medical Department of Cincinnati College. Third edition, modified and thoroughly revised. Illustrated by three hundred and forty-two engravings on wood. 8vo, pp. 771. Philad. 1857.

Rudiments of Pathological Histology. By CARL WEDL, M.D., etc. With one hundred and seventy-two illustrations on wood. Translated and edited by GEORGE BUSH, F.R.S. London: Printed by the Sydenham Society, 1855. pp. 637, 8vo.

The Pathological Anatomy of the Human Body. By JULIUS VOGEL, M.D., Professor of Clinical Medicine in the University of Giessen. Translated from the German, with additions, by GEORGE DAY, M.D. and L.M., Cantab. etc. etc. Illustrated by upwards of one hundred plain and colored engravings, vol. 1. Philadelphia: Lea & Blanchard, 1847. pp. 534, 8vo.*

An Anatomical Description of the Diseases of the Organs of Circulation and Respiration. By CHARLES EWALD HASSE, M.D., Professor of Pathology and Clinical Medicine at the University of Zurich, etc. etc. Translated and edited by W. E. SWAINE, M.D. London: Printed for the Sydenham Society, 1846. pp. 400, 8vo.†

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* This work was first brought out by the Sydenham Society.

† Dr. Hasse's volume was republished by Lea & Blanchard.

A Manual of Pathological Anatomy. By CARL ROKITANSKY, M.D., Curator of the Imperial Pathological Museum, and Professor of Pathological Anatomy at the University of Vienna, etc. In four volumes. London: Printed for the Sydenham Society, 1849–54.*

A Compendium of Human and Comparative Pathological Anatomy. By ADOLPH WILHELM OTTO, M.D., Professor of Medicine in the University of Breslau. Translated from the German, with Additional Notes and References, by JOHN F. SOUTH, Lecturer on Anatomy at St. Thomas's Hospital. London, 1831, pp. 456.

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Essai sur l'Anatomie Pathologique en General, et sur les Transformations et Productions Organiques en Particulier. Paris, 1816. 2 vols. 8vo, pp. 400 and 461. Par JEAN CRUVEILHIER.

Anatomie Pathologique. Par LAENNEC and BAYLE, in *Dictionnaire des Sciences Médicales.*

Anatomie Pathologique. Par CRUVEILHIER, in *Dictionnaire de Médecine et de Chirurgie Pratiques.*

WE pray our readers not to be alarmed at this array of the titles of works on Pathological Anatomy, as if it implied an intention on our part either to give a review of their contents or to attempt an elaborately critical disquisition on their respective merits. We shall not engage in a labor of this kind, although we shall be found to refer occasionally to their pages as we advance. Our design might be aided by adopting either of the courses just mentioned; but we hope to reach the end which we propose to ourselves by a shorter and an easier process. It is, to demonstrate the importance of pathological anatomy to medicine proper, regarding the latter both as a science and an art; and to impress on the minds of the members of the profession generally, and of teachers more particularly, the necessity of giving the subject more prominence in their clinical pursuits and public prelections than it has hitherto attained. Perhaps we shall the better succeed in gaining attention by stating, at the outset, our reason for introducing the titles of the several works which head this article. These works are part of the library of the writer; they were not collected after a definite plan, nor because of his ever having made, either as an author or lecturer, pathological anatomy a special study and pursuit; but, simply, because he believed them to be a necessary constituent part of medical literature, and, as such, requiring equal attention, and to be placed on the same line as works on the other more generally-admitted divisions of medicine. The list might, without much bibliographical lore, be greatly extended. In taking a retrospective course we should come to the name of the great Morgagni and his meritorious but less distinguished predecessor, Bonetus. In the descending series the array would be considerable, including the last authoritative treatise by Dr. Gross, noticed in the September number of this journal, but with a brevity quite incommensurate with its claims on our consideration. An English scholar will point, in this department, to a Baillie, while, perhaps, overlooking the claims on our gratitude of a richer contributor, though not under the same title and form, in the person of John Hunter, whose treatise on the *Blood, Inflammation, and Gunshot Wounds*, is a continued application of physiological and pathological anatomy to an explanation of the changes in morbid structures, and of the recuperative processes set up for their limitation or removal.

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* The second volume of this work was issued the first, then followed the third and fourth. Volume first was published the last. The entire work has been republished by Blanchard & Lea, in two volumes.

Were it not that pathological anatomy has been sometimes confounded with pathology—a part substituted for the whole—it would be scarcely necessary to define the object and limits of the branch now before us. We may say, then, that anatomy, as the science which teaches the structure of organic bodies, is divided into—1, normal or physiological; and 2, pathological or morbid, and, in reference to its application, into practical or medical anatomy. The last designation—medical—was applied by Harvey, whose physiological inquiries and great discovery did not prevent him from seeing its immediate bearings on practical medicine. But, while admitting that normal or physiological anatomy, which embraces in its limits both descriptive and general anatomy, furnishes the standard, deviations from which come within the domain of morbid or pathological anatomy, it does not follow that there should be a positive and unmistakable line of demarcation between the two. The regular and healthy structure of organized bodies often merges imperceptibly and in many different ways into that which is irregular and diseased. It has been well said that the idea of normal life is extremely indefinite, and it is only by a forced abstraction that the normal can be separated from the abnormal. We state this preliminary difficulty not with a view of discouraging inquiry, but rather of urging the necessity of a thorough investigation in both directions,—the healthy and the morbid structure,—so that the observer, by a familiarity with his subject, may be able to declare what is debateable ground, and what is clearly a deviation from the healthy or normal condition of the tissues and organs. Morgagni, than whom no one can be regarded as more competent to direct us in the premises, insists on a knowledge of both human and comparative anatomy as essential in the study of pathological anatomy.

Very crude and restricted notions of our branch are entertained by those who see in it nothing but an observation and record of the grosser changes presented by an organ or organs after death, such as redness, ulceration, morbid growth or attenuation, increased hardness or softness of texture, as regards the solids; and, as relates to the fluids, their effusion into some serous cavity, or on a mucous surface. We must not be supposed to underrate all or any one of these deviations from the normal anatomical condition of the organism; but we must go further, and, not content with noting the last stage of vital organic changes, apply ourselves to each individually, through its minutest details, and set forth its causes, gradual development, and consequences. To be able to do this implies the necessity of frequent *post-mortem* examinations, so that we may ascertain the changes of structure which have taken place at each successive stage of morbid development or disintegration, and appreciate the precise part performed by each tissue and organic system on the occasion. Hence the necessity of studying not merely the coarser changes, such as are visible to the naked eye, but also those finer modifications affecting elementary tissue, visible only by the microscope; in other words, of studying histology, or textural development. As histology is now a recognized integral part of physiological anatomy, so must it be regarded as equally essential to pathological anatomy; and, in like manner, as animal chemistry is a necessary ally to physiological anatomy and to physiology, so, of equal necessity, is its aid to pathological anatomy. It is the same science working very nearly by the same means in both branches; receiving in the first connection the title of physiological, and in the second that of pathological chemistry. This last is becoming a separate branch of science, but not as it seems to us beneficially for medicine, since we can hardly conceive of it as separated from pathological anatomy, of which it is a necessary complement if not an integral part. Enlightened by animal chemistry, we detect not only the differences between the secreted fluids, the product of healthy or physiological function, and those resulting from morbid changes in texture and functions, but also the changes in the blood itself, from which the other fluids are formed. In what are called general diseases this investigation assumes the highest importance, since, in the absence of local lesions, we must look to the blood alone for the material seat and cause of the disease, as in most fevers, for example. During the reign of the humoral pathology, when the blood and the various secretions were made to figure so conspicuously in the changes which they were believed to undergo, an explanation of the chief symptoms of disease was supposed to be furnished in this way. Disease was regarded as a struggle between these morbid and disturbing causes on the one hand, and nature on the other, who, exerting herself in opposition, attenuates, elaborates, overcomes, and expels them by the natural channels, when the case terminates favorably; or the disease is directed on organs essential to life, and nature is exhausted in vain efforts, when the case ends fatally. This might be called the period of the *pathological anatomy of the fluids.* Almost forgotten, except as belonging to the history of medicine, and ridiculed under the influence of solidism, which was inaugurated in modern times by Hoffman and Cullen, humoralism comes up, once more, in our own day, and takes a permanent place in the pathology of the schools, under not only a modified phraseology, but with the support of the microscope and animal chemistry; such as that exhibited, in relation to the latter, by Andral and Gavarret, in their *Hæmatologie:* and, once again, we can speak of a revival of the age of the pathological anatomy of the fluids.

Allusion has been made to the difficulty, in some cases, of distinguishing healthy from diseased structure; and hence an occasional cause of fallacy in *post-mortem* examinations. We cannot convey a better idea of the risk of mistakes of this nature than by repeating the illustrative remarks of Wedl on the subject:—"The excessive size or minuteness of an elementary organ, (cell,) its altered relative position, its changed contents, the various conditions of the *nucleus*, &c., are points demanding assiduous and strenuous investigation. In order to render the matter clearer, we will here adduce some instances:—The presence of fat in the hepatic cells is connected, to a certain extent, with the conditions of nutrition; and we should be very wrong, where the fat is present in small quantity, and without any other complication, at once in assuming the existence of a fatty degeneration of the cells. The same holds good with the fatty contents of the epithelial cells of the kidney, in which also the presence of fat depends, to a certain extent, upon their nutritive condition, and by itself alone, in a minor degree, should not be regarded as pathological, or in fact as at all sufficient to constitute a 'Bright's kidney.' The retrograde or atrophic modifications also of the tissues, occurring in old age, have not the same significance in a pathological point of view as they would have in younger individuals. A certain amount of atheromatous deposit in the vessels of a person eighty years old would necessarily be referred to the involution proper to the physiological condition at that period of life; while the same degree of the affection in the vessels of a youth of twenty would indicate a partial premature retrogression of the organism, and could only under such circumstances be of pathological interest. Hence it is evident, that, in the exposition of the abnormal condition of a tissue due regard must be paid to all the circumstances, and the more so in proportion as the anomalous state is less determinate." In the *post-mortem* examinations most frequently made, viz. of the digestive mucous membrane, how necessary do we find it to protect ourselves against erroneous deductions from hasty observations of the colors of the mucous surface; and from assuming as a morbid condition, a redness of the part, for example, that which is physiological at a certain age, and, as regards the individual, in certain periods of the digestive process.

In the study of pathological anatomy opinions must never be substituted for facts, as is too often done in careless examinations of the dead body. How common for us to be told that an organ is inflamed or bears marks of its having been inflamed during life, although no specification is made of the characteristics of this state; and yet a discrimination between it and other preternatural conditions is not always an easy matter. A frequent cause of fallacious induction consists, as Cruveilhier very clearly points out, in ignorance or oversight of the physical and chemical changes wrought in the texture of the organs, in the last agony, or immediately after death. The changes of most common occurrence are in color and consistence; and in them there is great variety. They are those which incipient putrefaction most readily develops. The vital principle withdrawn, or vital action ceasing, the relations previously existing between the solids and fluids are no longer preserved, and parts which during life gave passage to the fluids without combining with them, become after death like simple porous bodies and allow of free infiltration. The coats of the vessels, in the first instance, then the adjacent tissues, are colored as if by a process of dyeing; and hence vascular redness, to which so much importance has been attached, and hence, also, the redness of the tissues, regarded by some as evidence of great hyperæmia if not of actual inflammation. Passive sanguineous congestions, for instance, are often mistaken for the effects of inflammation, as in the accumulation of blood and serosity in the posterior portion of the lungs, which is partly a cadaveric phenomenon. A sanguineous stasis may be made in any part by rendering this latter dependent, whether it be the head or the feet. Softening of the tissue is an effect of this diffusion of the fluids beyond their customary vascular or cellular limits; and sometimes a finger may be thrust into the substance of the lungs or the liver, which has been softened by cadaveric infiltration, in the same way as if it were thrust into these organs when in a state of inflammation. So, also, of other fluids besides the blood. Scarcely can a body be opened without our seeing the transudation of bile through the sides of the gall-bladder, and, not unfrequently, even the contiguous intestine and parietes of the abdomen. Cruveilhier relates his having opened the bodies of persons who had died soon after a full meal, in which the gastric mucous membrane was dyed of a vinous tint by the coloring matter of the wine previously drunk. In other cases, the coloring matter had become blackish in the small intestine, which was of the same color. This author asserts that the phenomena of putrefaction are soon added to those of a physical nature just noticed; and that the greater number of the bodies opened in the hospitals must be regarded as in a state of incipient putrefaction. Beclard shows how the evolution of gas in the abdomen, by throwing up the diaphragm compresses the abdominal vessels, causes a reflux of blood to the heart and the veins of the upper part of the body; and hence injection of the face, redness of the eyes, contraction of the pupil, and sometimes hemorrhages, if we can designate by this term cadaveric transudations. Whenever we meet with diffused redness, without arborescent or tufted vascular injection, we should regard it as a physical phenomenon. Of the same nature in many cases is the softening of the tissues noticed in *post-mortem* examinations.

Pathological anatomy is declared to be a modern science; certain it is that only of late years has it assumed the dignity of an independent one. The irregular and slight contributions made to it, in ancient times, by the school of Alexandria interest us more as belonging to the literature of medicine than as forming an essential part in the progress of the branch now under notice. Outlines of its history are given by Cruveilhier, Otto, and Rokitansky, to whose volumes we refer our readers for information on this point, which we do not deem needful to introduce here. It is enough for us to mark the chief eras, and name the distinguished few who have contributed to create them. At the beginning of the sixteenth century, the period of the regeneration of anatomy, we may date the rise of "an occasional, fragmentary, indeterminate study of pathological anatomy." The importance of this latter, however, had been early felt, as Eustachius, the rival of Vesalius, toward the close of his life "expresses his regret that he had not rather bestowed upon pathological anatomy that time and attention which he had devoted to physiological anatomy." To Italy, which took the lead in the restoration of anatomy, are we indebted, in the person of Antonio Benivieni, for the first work on the subject, entitled, *De Abditis Morborum Causis*, written in 1507. Rokitansky, after enumerating other laborers in this line—including Bonetus or Bonet, who was the first to com-pile an ample repertory on the subject, (*Sepulchretum*, 1679,) and Blankaard, (*Anatomia Practica*, 1688,)—passes the following animated and expressive encomium on Morgagni, who wrote nearly a century later:—

"Above both these—above all that had been previously accomplished—stand pre-eminent Morgagni and his work *De Sedibus et Causis Morborum*, (1767.) Notwithstanding its defects, this book remains a model of industry and perseverance, of method and arrangement, of breadth and perspicuity, and, lastly, of originality, for all time."

The opening of the present century was made ever memorable by the genius of Bichat, who in addition to his great merits as the founder of general anatomy, and his being the first to make the attempt "to treat histology scientifically," gave the most decided impulse "to a right conception and application of pathological anatomy."* Pathologists imitating him, endeavored to reconstruct their science upon an anatomical basis. France was the land, of all others, in which men sought and found in pathological anatomy a solid foundation for medical knowledge. "Such men were, among others," continues Rokitansky, "Bayle, Corvisart, Laennec, Dupuytren, Broussais, Cruveilhier, Rochoux, Lallemand, Riobe, Andral, Louis, Gendrin, Bouillaud, Billard, Rayer." "In England many have, up to our own day, worked in a similar spirit. Among these we may mention the names of Abernethy, Charles Bell, Astley Cooper, Hodgson, Farre, Wardrop, Howship, Baron, Hodgkin, Hope." The list might be extended; and in no case ought the names of Abercrombie and Stokes to be omitted. "In Italy, on the contrary, and in Germany—if we except the impulse given in the same direction by the ingenious Reil—pathological anatomy has been, upon the whole, less cultivated, and has exercised less influence upon medicine. Accordingly, Germany and Italy have but few men to place in parallel with those of France; few to add to the names of Scarpa, Malacarne, Paletta—of J. F. Meckel, Otto, and (in industry and method the essentially German) Lobstein." The future historian of pathological anatomy will not fail to rank the name of Rokitansky himself on the first line of German laborers in this field; and after him, but at not a long interval, some of his eminent contemporaries, who, be it said, were entitled to a place in his own record, brief as it is.

The name of Bichat reminds us of the first of the aids to other branches of medicine imparted by pathological anatomy, viz., that to general anatomy. This eminent man, whose mind was both suggestive and experimental, was not content with testing carefully the normal, physical, and vital properties of a healthy texture, or a membrane, in order to ascertain its affinities and to determine in what class it should be placed, but he had recourse, also, to an observation of the morbid changes in its structure and products, either in the human body or as the results of experiments for the purpose on animals. In this way, even with more certainty than by resemblances offered in their healthy state, he was enabled to classify, under one common head, membranes in different and remote regions of the body and forming a part of quite different organs; as he did with the serous membranes, for example.

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* We do not take any account of a posthumous volume, made up of imperfect and not well-authenticated notes of Bichat's lectures, issued under the auspices of Beclard, with the title of *Anatomie Pathologique*. This work is not received as any authority by the French medical critics.

Physiology, also, is indebted to pathological anatomy, as when we learn the exact relation of function to organ, in the excitement, disturbance, or abolition of the former, consequent on the irritation, injury, or destruction of the latter; a relation better determined in this way than by vivisections of animals. In the first case, after a subsidence of the inflammatory stage, and when the lesion has assumed a subacute or more definitively chronic character, the line of demarcation is drawn that separated the lost or atrophied part from the remaining healthy one; and the functional differences then give the exact measure of the structural disorganization or loss—a fact this which no mere study of symptoms alone could have revealed to us, but for the observation of these in connection with a knowledge of morbid structure obtained after death. In the case of vivisections, it is difficult to restrict the experiment within the precise limits of the part or organ, so that contiguous textures shall not also be implicated; and besides, the sympathetic disturbances are for a while so great, and throughout the whole period of the experiment there is such a degree of irritative excitement, that the disorder or the loss of function which should result merely from the injured organ is masked and complicated. The destruction of an organ, as revealed by pathological anatomy, takes time for its completion, and at last ceases to awaken any very disturbing febrile and constitutional derangements. Hence the loss is analogous to congenital defects, as in monstrosities, and enables us, as we would in the latter, to say not only what are the functions withheld from exercise by the loss of an organ, but also the degree in which the latter is necessary to the vitality of the entire organism, and how far its structure is connected with that of other organs. We might adduce vivisections of the brain and nerves of animals, anatomico-pathological lesions of these parts in the human body, and anencephalous fœtuses, in illustration of these remarks.

Pathological anatomy may be said to be an integral part of clinical medicine, constituting as it does the chief basis of diagnosis, without which there can be no certain indications for the treatment of disease. Here we must remind our readers that we have claimed for our branch more than its being the mere exposition of the last lesions of tissues or of an organ which precede death. Thus restricted, it would possess comparatively little value for practical medicine. But when we contemplate morbid anatomy as making us acquainted with the successive stages of disease, resulting from organic processes, which it scrutinizes and explains, it assumes a higher purpose and more extended attributes. If we admit that symptoms are but the expression of a suffering organ—the effects of an antecedent cause, it is to this latter that we must direct our chief attention, and to it address our remedies. Some have, indeed, imagined a disease to consist in a group of symptoms, which are made to represent an abstract idea, in place of positive material derangements of the living organism; and in this sense these persons set themselves about combating an imaginary entity as they would a train of symptoms, the supposed effect of demoniac possession. The therapeutics based on such a pathology are, of course, purely tentative and uncertain, and at the best tedious, even if by chance successful. Each symptom is met by the administration of a particular medicament, which is supposed to possess properties capable of its removal; and thus the chase is continued in detail, and valuable if not irrevocable time is lost while the mischief of internal organic lesion is going on. The most violent symptoms—those which are most distressing to the patient, and often alarming to the practitioner, who rests his nosology on mere symptomatology—do not represent or leave behind them any serious lesion: they are but remote or secondary effects of an internal organic cause. Thus, for example, the burning heat of the skin, the thirst, the continued restlessness, the pain in the muscles and sometimes even in the bones, lassitude and extreme weakness, common in fevers and some of the phlegmasiæ, give no clue to the kind of fever or measure of its intensity: they are not the immediate results of morbid organic action or changes in these parts. If we add discoloration of the skin, as when it assumes a jaundiced or yellow hue, we cannot tell from this symptom whether the case is one of bilious or of yellow fever, or whether the stomach, or the liver, or the duodenum is the organ chiefly suffering. The patient sinks exhausted by the violence, sometimes it would seem by the duration, of the disease; and reference being had to the symptoms or external evidences alone, it might be said, that in the first stage he had been burned up, consumed by the excessive heat and thirst of which he continually complained; and in the second, that he died from inanition, caused by his inability to take and to digest food. All is doubt, uncertainty, and mystery! If sounder views of disease are entertained, if facts have been substituted for conjecture, and a careful analysis made of the phenomena of disease, and inductions only admitted from material and recognizable premises, we must seek for the cause of this reform and amended philosophy of medicine in pathological anatomy. The improvement in the one has kept pace steadily with the advances made in the cultivation of the other. Inspection of the body after death shows that the prominent symptoms, those of which the patient incessantly complained, were of minor moment, as far as regards their being indicative of the progress and termination of the disease; and that those less noticed, and regarded as merely epiphenomena, were truly the expression of the suffering and altered organ, which had been obscured and overpowered by the sympathetic disturbances of other organs. The true value of a symptom can only be measured by the condition of the organ in whose functional exercise it is developed. At times, we are able, by means of *post-mortem* examinations, to go beyond what in life seemed to be the co-relation of symptom and organ, and thus to gain a lesson of caution for our subsequent guidance. In the patient before us we may think we have to deal with a case of original asthma: it turns out to be an organic disease of the heart. In another we are treating hepatitis, when it is in fact pneumonia.

All that we know of physical diagnosis, as it is termed, is based upon pathological anatomy, which teaches the relation between certain sounds elicited by percussion and auscultation, and the morbid alterations of structure and secretion in the pulmonary and cardiac organs. Wanting a correct appreciation of the one, the other would be as unmeaning in diagnosis as the murmuring of an Æolian harp or sounds caused by the vibrations of musical glasses. It was not by a series of lucky guesses or plausible analogies that Laennec and Piorry were able to lay down those rules of physical diagnosis, and the connection between it and vital diagnosis, which now guide us in our daily practice, and place us in advance of the observation of symptoms alone, though prosecuted for many centuries. To what but to morbid anatomy are we to ascribe the different construction put on hemoptysis, both in regard to its diagnosis and prognosis, and also its treatment, at the present time, from that in all preceding ages? Regarded as a simple hemorrhage connected with more or less general plethora or pulmonary congestion, it was treated accordingly; and of course, often by free venesection and antiphlogistics generally. Its relation to phthisis was believed to be, if not causative, at least as a precursor to the latter. But now, thanks to pathological anatomy, we have learned that, in a majority of the cases of hemoptysis, the hemorrhage is an effect and one of the symptoms of a tuberculous lung; and as such we are chary in abstracting blood, and in the use of reducing treatment, beyond what are urgently demanded by the associated pulmonary congestion; knowing that a reducing course is contraindicated in tuberculous disease. Our suspicion of this sinister connection of hemoptysis is greatly strengthened by our detecting, by means of percussion and auscultation, an alteration in the pulmonary tissue in the upper portion of the lung, in which pathological anatomy has taught us that tuberculosis begins.

The entire pathology of phthisis, both in relation to cause, inception, progress, and termination, and the modified views of the effects of remedies, at the present day, are almost entirely due to pathological anatomy, which, if it has not pointed out a successful treatment, saves us, at least, from much empiricism and false doctrines, which would prompt to a resort to useless and damaging therapeutics. It has also shed a ray of hope for the consumptive invalid, and offers encouragement to the physician, by showing that consumption has been cured by an arrest of the morbid processes which were going on in the lungs, and, at times, by the conversion of tubercle into calcareous deposit; although we are still ignorant (despite the assurances to the contrary of lying empirics in and out of the profession) of any therapeutic or other means by which these salutary changes can be brought about.

Cardiac pathology, lost or obscured in what was believed to be other separate diseases, such as asthma, dyspnœa, and palpitations, has, since the time of Corvisart, half a century ago, attained to a precision in its diagnosis and a knowledge of its structural alterations and their effects, for the like of which, if we except the contributions of Morgagni (Letters 17 and 18) in his great work *De Sedibus*, and of Senac, as contained in his volumes on the structure, action, and diseases of the heart, we look in vain to all that had been done in this line during the long preceding period of more than two thousand years. This wonderful progress and its results are the fruits of pathological anatomy, which has imparted an intimate knowledge of the changes in the nutritive life of the muscular tissue of the organ, (hypertrophy and attenuation, softening and fatty degeneration of its walls,) of inflammation of its lining and investing membranes, (endocarditis and pericarditis,) and of constriction, patency, or ossification of its valves. From the same source we have derived an acquaintance with the relations between diseased heart and diseased brain, as perceived when hypertrophy of the left ventricle is associated with apoplexy. So, also, in dilatation and weakened powers of contraction of the right side of the heart, and in valvular obstructions, both of which prevent a free and ready return of blood by the vena cava, and induce consequent retention of this fluid in the veins generally, we find the chief cause of passive dropsy.

A yet more recent triumph of pathological anatomy is exhibited in the discovery of that morbid or granular structure of the kidneys, which, by disordering their functions, brings with it a number of other diseases—each one of them formerly treated as primary or of distinct occurrence; or if, as in the case of dropsy, it was regarded as secondary, a wrong cause was assigned for its appearance.

The diseases of the nervous system are commonly represented to be less indebted for the elucidation of their pathology by the detection of a material and structural seat, or accompanying organic lesions, than affections of other parts of the organism. In the main this belief is well founded, but even here the domain of semeiology, if not of therapeutics, has been greatly extended by a careful application of pathological anatomy to our investigations in this department. We may cite, in proof, the familiar example of apoplexy, in which the extravasation of blood and deposited clot in the brain affords an explanation of certain symptoms, such as paralysis and anæsthesia; while, at the same time, it teaches us the futility of attempting, by any class of remedies, to bring about a speedy absorption and removal of the effusion, and consequently suggests the necessity of our admitting time as an important element in the treatment of the case. That other lesion of the brain termed softening, which is followed by distinctive affections of the mind and muscular system, is one of the modern discoveries effected by morbid anatomy. Here, still less than after apopletic seizure, can we hope, with a knowledge of organic cause, to bring about a restoration of healthy structure and a removal of the disease; but we are able to display the negative merit of withholding a number of wearying, if not injurious trials of various therapeutic agents, which practitioners, when less enlightened on the subject, deemed it to be their duty to make.

A knowledge of the successive stages of the lesions of internal organs constituting inflammation, and the corresponding diseases of function, can only reach us through morbid anatomy. The entire value of the pathognomonic symptoms of pneumonia in establishing a diagnosis, and to a great degree a prognosis, and in regulating the treatment, depends on their representing the changes of congestion or infiltration, hepatization and suppuration, which the inflamed lung undergoes in the progress of the disease. Aware as we are that in inflammation of a viscus, as indeed in all the phlegmasiæ, a certain period must elapse from its inception to its termination, we can easily estimate at their real worth the pretensions of those who claim the ability to arrest the disease, or to cure it in an incredibly short time. The separation of croup from other diseases of the respiratory passages is due to pathological anatomy; and under the same guidance have we been enabled to divide this disease into—1st, the simple catarrhal and spasmodic; and 2d, the membranous. In our fear of the latter, we are led to the adoption of an energetic treatment of which the collective symptoms might not always indicate the necessity. By the same means also a diagnosis is made to establish the distinction between croup proper and certain anginose affections marked by membranous exudations on the mucous lining of the fauces and pharynx as well as of the larynx; and on this distinction, added to our knowledge of their external causes, is based an essential difference in the treatment of the two diseases.

We have now adduced proof enough to make out our case; and to show, beyond question, the great and beneficial applications of pathological anatomy to the different branches of medical science, including in a more especial manner clinical medicine. We might, if we were writing an essay on the subject, increase and diversify the illustrative proofs of this truth. Surgery, without pathological anatomy, would be reduced to a mere mechanical art, aided by certain empirical practices, alike unsatisfactory to the surgeon and of doubtful benefit to the patient. The union of divided and the restoration of lost parts of the animal organism, the genesis of morbid growths and products, and their differences in structure and progress, as, also, in their readiness to call into sympathetic disturbance the different functions, and to bring on disease and death, would all be subjects of conjecture and mystery to the surgeon who is unenlightened by pathological anatomy. When to amputate a limb or to excise a tumor—what will be the probable consequences of the operation—what the constitutional treatment necessary to prevent the patient from being carried off by consecutive inflammation and fever, or from sinking at once under the shock of the operation—are questions which the unenlightened surgeon will be at a loss to answer, if, indeed, he has the perspicacity to present them at all to his own mind for impartial adjudication.

Medical jurisprudence rests largely on pathological anatomy, as in the investigation of all cases of homicide and suicide—whether they be the result of wounds, suffocation, and strangulation, or of poisons, even although in this last case the chemical tests are all-important. The question of cadaveric, as distinguished from pathological alterations of tissue, and the different effects of putrefaction after the body has been some time submerged in water or buried in the usual way, belong to the same category; as do also those of abortion and recent childbirth, when the expert is required to ascertain whether such processes have been gone through. A more precise knowledge of morbid anatomy, in its various applications to medical jurisprudence, possessed by the members of the medical profession generally, would furnish aid essential to justice, and, at the same time, prevent the mortifying exhibition of contradictory opinions when they are summoned to give evidence in a court of law. As things now are, every sprig of law, after a day or two of cramming by his looking into a work on medical jurisprudence, has it in his power to embarrass, perhaps to stultify, the medical witness in the case, who, if ignorant, will be ashamed to avow it, and will be apt to indulge in all kinds of random conjecture, and to go on from one blunder to another, until court, jury, and audience are convinced of his incapacity, and, worse still, draw the erroneous inference that medical science is not capable of throwing light on the subject. When will our schools be found imitating the medical jurists of Germany, who designate pathological anatomy applied to medical jurisprudence by the title of forensic anatomy, (*anatomia forensis*)?

Great as are our obligations to pathological anatomy in the investigation of acute diseases, they are greater still in that of chronic ones. The affected organ in the latter state of things speaks to us by fewer and less active sympathetic disturbances, and hence it is the more necessary to sift and examine the evidence furnished by the symptoms; but its own lesions are on this very account less masked by a crowd of these symptoms. The slow fever, the gradual wasting away of the frame, and loss of strength and spirits, alternating sometimes with fitful gleams of cheerfulness, afford unmistakable proofs of disease, and of disease kept up by an organic cause. There is a thorn in the flesh, the nature and progress of which are revealed by pathological anatomy, and by this revelation we are put in the right direction of cure, without, however, the precise means being indicated. We learn the slowness of the morbid changes of structure in the organ, and also the length of time for the recuperative ones to be gone through before we can hope for the desired restoration to health. We have recourse, in consequence, to a plan of treatment which shall effect our object without violence to the system, and aid nature, in the processes which he sets up, viz. the absorption and removal of morbid deposit in the organ, and the renewal of healthy secretion and of nutrition. The great element of time having been required by the physician and conceded by the patient, to whom a plain and untechnical explanation of his state should be made, the entire plan will then be developed. It will consist of an alterative course in the largest sense of the term, and will include not only recourse to medicines of this class, but also to the chief agents of hygiene, and the means, if possible, of agreeable mental occupation.

Our cause on the present occasion is too strong and is fortified by too great an array of facts, presented in too many different shapes, to justify special pleading or to allow of our leaving unnoticed some objections which may seem to weaken the force of the general argument. When we said, a while ago, that symptoms are but the expression of a suffering organ, it might have been replied, that, granting the fact, it resolves itself into an abstract proposition, of the truth of which we sometimes find no material proof in alteration of texture of the organ thus suffering. Apoplexy sometimes kills without any perceptible rupture of vessels, serous effusion, or other lesion of the brain; the same absence of lesion marks some cases of epilepsy; and we have ourselves seen convulsions followed by coma, strabismus, and other symptoms of acute hydrocephalus, or, as it would now be called, meningitis, and death without encephalic or meningeal alterations. It is not an uncommon thing for us to be baffled in our search after structural changes in subjects who have died of fevers of different types. Many years ago we lost an estimable youth in declared and satisfactory convalescence, after an attack of fever resembling in its classification a mild case of typhoid: the death was sudden and unexpected. A *post-mortem* examination made for us by the accurate Horner failed to reveal, either to him or to other parties present at the time, an appreciable lesion of any of the great organs or membranous systems. Asthma, for the most part dependent on or symptomatic of cardiac or of pulmonary lesion, is sometimes purely nervous; or, at least, it is not associated with any noticeable deviation from the healthy structure of the organ which is its seat. Most of the diseases which we call organic find their homologues, so far as symptomatology is concerned, in affections entirely nervous. In some diseases the structural lesions, if they existed at all, disappear just before or at death. And, again, when we meet with extensive structural alterations of a viscus or viscera after death, from certain kinds of fever, as of the stomach in yellow, of the liver and duodenum in bilious fever, and of the lower end of the small intestines and the spleen in typhoid fever, how should we speak of them? As primary lesions, or secondarily sustaining causes of the fever?

Granting the full weight which may be attached to these objections, they only go to show, what no thoughtful person can deny, that pathological anatomy is far from being a complete science, and that the difficulties enumerated are only proofs of the necessity of a continued and thorough inquiry, with the aid of the microscope and of chemistry, into pathological histology and anatomy. The occurrence of functional disorder, and serious and even fatal disease, the direct effect of structural alterations and lesions cognizable by our senses, will not allow us to doubt, for a moment, that the like effects will ensue from internal local causes. Apoplexy and palsy, such as we commonly meet with, are not the less produced by extravasation of blood from ruptured vessels, because under rare and as yet unknown circumstances these diseases may occur without perceptible lesions; nor is it less evident that in the former case the restoration of sensibility and mobility will take place in the ratio of the removal by absorption of the blood-clot or of the serum, which, by its pressure on the cerebral organ, had given rise to the abolition of intellect and of sensorial and motor power. It may be made a question, in a lack of full details of the cases, whether the sudden deaths attributed to dry apoplexy were not really caused by organic lesions (valvular obstructions, or the like) of the heart. In reference to the belief that phlogosis and engorgement of one or more of the viscera may be an effect instead of a cause of febrile disease, we need not engage in a dispute about the order of succession. It is sufficient for us to learn from pathological anatomy that the whole force of the disease is spent on a particular viscus, in order to induce us to take speedy and active measures for either carrying off a first cause of admitted mischief, or of mitigating the violence of an effect which is a secondary cause, and which may be equally injurious as the first.

It is justly said by Vogel that pathological anatomy derives the materials of its knowledge from two separate sources. First, from *observation*, which includes the examinations of portions of the living body altered by disease, and removed either by the knife of the surgeon or thrown off as excreta, (in the widest sense of the word,) together with the examination of the dead body, which is often able of itself alone to explain to the practiced observer the whole course of the disease. In most cases, continues this writer, it is, however, of importance that the examination of the dead body should be supported and perfected by observations made during the progress of the disease. It is also essentially important to therapeutics that pathological anatomy should be pursued by scientific, unbiassed pathologists, rather than by mere anatomists; as we must be very careful in tracing the connection which subsists between the symptoms during life and the changes noticed after death.

The other mode pointed out by Vogel, by which pathological anatomy gains new facts, is by *experiment*. Experiments instituted on animals, and, in certain cases, on man, with the view of artificially producing a morbid condition, and then carefully studying it, afford most valuable aid; for here, as he alleges, the quality and quantity of the causes in action are much more under control than in ordinary cases of disease. On this point our own opinion, already given, is somewhat different from that of the German professor.

Wedl, in reference to the means by which pathological observations are to be carried on and histological researches made, tells us:—"The *methods* followed in pathologico-histological researches may be described, as it were, as *synthetic* and *analytic*. The latter commences with the elementary constituents, and proceeds to inquire into their disposition and relation to other elementary parts, their various chemical properties, their diversities in different parts, &c. In the *synthetic* method, the secondary arrangements of the elementary parts grouped together, are investigated. For the *analysis*, the most powerful object-glasses of the compound microscope are employed; for the *synthesis*, the lower powers and the simple lens. The course to be pursued in any particular case depends upon the plan of investigation.

"The *simple lens*, or microscope, is an indispensably requisite instrument, and every observer should take care to be provided with good lenses of this sort, with which alone many observations in their totality can be undertaken; as, for instance, the distribution of the larger blood-vessels, their course and relation to various parts of a tumor, or the areolated tissue of a cystic thyroid gland, &c.

"It is equally necessary in the preparation of more delicate objects. The powers available should vary from four to fifteen diameters. The lenses should be supported on a firm stand, so arranged as to allow of the object being viewed in various positions, and, if need be, by transmitted light. A watchmaker's lens is recommended by some observers.

"Researches by means of the *compound* microscope involve a tedious, though absolutely necessary, detailed investigation of the component parts of the diseased tissue, already seen to differ by the naked eye. The microscopical examination, therefore, starts from what has been seen by the naked eye, and presupposes a strict observation by the latter; and it is evident that pathologico-histological research of this kind must demand considerable time."

The requisite aids in researches of this kind, as enumerated by the author, are *distilled water; acetic acid*, for the display of *nuclei; sulphuric acid*, as a useful reagent, for instance, to detect the presence of carbonate of lime in concretions; *hydrochloric acid*, occasionally useful in the investigation of morbid structural changes in the bones and teeth; *nitric acid*, much diluted, may be employed under the microscope to show the change in color of the coloring-matter of the bile, for giving a yellow color to organic muscular fibre, the hardening of organs, &c.; *chromic acid*, much diluted, [or a solution of bichromate of potass,] may be employed for the hardening of morbid tissues in order that sections may be made; *caustic potass and soda*, or *the carbonates of those alkalies* are extensively useful for the display of elastic tissue of the nerve-fibres, or rather of the medullary matter contained in them, for giving transparency to connective tissue and to muscles; *solutions of common salt and of sugar* (a few grains to the ounce of distilled water, so as to make a solution in which the blood-corpuscles do not contract) are employed in tracing the distribution of the blood-vessels; *plain water*, for depriving the blood-corpuscles of their coloring-matter. In the case also of very delicate or easily-ruptured cells, it is advisable to employ one of those solutions, since they are injured by the imbibition of plain water. *Goadby's fluid*, composed of four ounces of salt, two ounces of alum, four grains of corrosive sublimate, dissolved in two quarts of boiling water, may be employed either as a preservative agent or for the purpose of hardening tissues; *alcohol* is very valuable as a preservative agent, and also for the purpose of hardening tissues. Thin sections, also, of preparations made with alcohol, and treated with acetic acid or carbonate of potass, are very instructive in many respects. *Tincture of iodine* is useful, partly for the coloring of objects, partly on account of its reaction on amylaceous granules; as, for instance, in fœcal matters and upon fungi.

"The *instruments* necessary for the pursuit of histology are few and simple. They consist of common needles and straight cataract needles, some straight and fine-curved scissors, hooks, scalpels, razors, fine forceps, slips of glass, pieces of thin glass or talc for the covering of objects, fine glass tubes, a metacarpal saw with moveable blades, having teeth of different degrees of fineness, several files, probes, and hair-pencils, slices of corks," &c.

If we look at pathological anatomy in an exoterical point of view, and inquire into the position which it holds in our programmes of medical education, we see little else than an entire neglect or depreciation of its worth. Principles are every now and then dwelt on, while that which underlies all principles is overlooked: cautions are uttered, in solemn oracular style, against theories and speculations and hasty judgments, while the only certain check and corrective—inductions drawn from carefully-observed phenomena of organized matter—is concealed and too often contemned. A well-educated physician coming among us, as a stranger, but who had heard of our numerous medical colleges, might very naturally be supposed to express his satisfaction at the prospect thus offered for a thorough inculcation of this subject in all its bearings, and by competent teachers, on the thousands of eager youths who resort every winter to our schools. What will be his surprise when he reads the following sentence in the preface to Dr. Gross's *Elements of Pathological Anatomy*:—"In the forty-five medical colleges which at this moment exist in the United States, there is not, with perhaps a few exceptions, a chair of pathological anatomy: thus clearly showing that the teachers connected with these institutions have either no very exalted opinion of the value of this science, or that they are afraid of innovation." As a separate branch it very seldom forms a part of the curricula of our medical schools; and when it is announced to be taught in connection with another branch, or sometimes other branches, from one chair, there is no security for its really becoming a definite and appreciable part of the prelections and demonstrations of the professor. It is like a ball tossed from one teacher to another, and caught or let drop as suits the fancy of the hour. Sometimes it is introduced into a school as the subject of a separate chair, not so much from a conviction of its intrinsic importance as from a desire on the part of the Faculty to secure the support of a person of some influence, and who must, it is alleged, be provided for. His qualifications for the post are not very rigidly inquired into; and whether this be owing to the indifference of his new colleagues to the subject and their ignorance of its real character, or their good nature, we need not say. The practical commentary on the whole transaction is offered in the fact of the new incumbent at the next reorganization of the faculty, or after the death of a brother-professor, abandoning his chair, which is in consequence abolished; and he takes one of the old-fashioned series, the duties of which are more congenial to his tastes and do not tax him with any additional effort of thought or attainment.

In looking over the announcements of the courses of instruction for the present season in twenty-one medical colleges, which include the leading ones of the United States, we do not find a distinct chair of pathological anatomy in a single one of them; nor is it named at all even in connection with other branches in more than three of the entire number, and then it is with and coming after physiology. We look in vain for a chair on the subject in either of the schools in Cincinnati and Louisville, in the former of which it was once taught by Dr. Gross, and in the latter by his eminent friend Dr. Drake. Its separate existence is ignored in the school with which Dr. Gross is now connected, as it is in the rival one of the University of Pennsylvania. The most that can be conceded to these two institutions in the matter is the chance good-luck of a professor in each of them being the author of a work on *Pathological Anatomy;* but as far as regards the fostering influence, the genial warmth of sympathizing associates in either of them, we are afraid that these productions would have seen the light as readily on the other side of the Atlantic as here. The creditable *Treatise* by Dr. Horner has not, after an interval of more than a quarter of a century, as yet produced public fruits nor secured a continuance, on the part of others, in the course which he began. Whether Dr. Gross's *Treatise,* rich as it is in positive knowledge and suggestive reasoning, will be productive of happier results, remains to be seen. We are glad to be able to mention one exception to this general neglect. It is in the instance of the medical department of Harvard University, in which pathological anatomy is so worthily taught by Dr. J. B. S. Jackson.

We shall be told of the difficulty of multiplying the demands on the time and attention of a student whose mind is already greatly tasked, and must necessarily be still more so by the addition of a new chair.. Something also may be hinted about increasing the expenses, already considerable, of the young men who resort to the lecture-rooms of our medical colleges. But the primary and permanent consideration, in questions like this, is its bearing on medical science and medical art, and through these on the ability of medical men to do the greatest good in their power to the community. Now if it can be shown that pathological anatomy is an indispensable basis and support of both medical science and medical art, and that a competent knowledge of it will strengthen the hands of medical men in their professional ministrations, we are not justifiable in refusing to give it all due countenance, and to enforce its precepts from a fear of any difficulty either on the score of mental labor or increased expense. We shall encounter a more serious difficulty than all this in an attempt to reconcile to our convictions of right an economy of time and money at the cost of the lives of our fellow-creatures. Suppose us to be for the nonce, what in fact, however, we are not, of the number of those who assume or are appointed to the office of teaching medicine, we must not allow the acknowledged difficulties of our position to cloud our perception of responsibilities of a very momentous nature incurred from the moment of our installation. Professors ought not to subject themselves to the taunting remark, that an amount of thought and determination devoted to the recognition, advancement, and thorough teaching of the different branches of medicine, equal to that manifested in swelling the numbers of their classes and watching over the fiscal concerns of their schools, would obviate the objections and smooth the difficulties presented by the timid, the ill-informed, or the selfish.

There is yet another consideration which cannot be without weight in all questions of reform and progress in the age in which we live. It lies at the foundation of all our medical institutions, and concerns their very existence. The most superficial observer can hardly fail to notice the desire for change and the impatience of restraint by which the whole world is agitated at the present time. There is a spirit abroad which, although it may disclaim an intention to destroy, is so intent on reconstruction that it is anything but nice in the selection of its materials, and cares little whether these be new or are procured from old edifices. It exhibits itself both in opinions and in practices: sometimes in fitful and instinctive longing for improvement, but in ignorance of means and direction; sometimes in a more measured fashion, in which the discontent of the crowd is cunningly shaped by the designing and unscrupulous few. These disturbing elements set loose, the friends of social order, the conservatives of what they believe to be right, are called on to rally for the protection of themselves and institutions under and amidst which they live; but in order that they may do so with effect, they must be sure that they have both right and reason on their side; and that they do not become, without being conscious of the fact, the advocates of error because it is old, and the opponents of truth because it is brought before them without due preparation and recognized forms and precedents. The truly intelligent friends of medical science and medical institutions, much as they deprecate ignorant pretension and the vulgar clamor of empirics and their adherents, as well as the absurd speculations and practices which spring up to the wonderment of the multitude, are not on this account to be classed with those who, by their conduct if not by their language, assert that medical institutions have reached their final limits, that to press beyond these is desertion, and that reform is revolution and innovation destruction. The true friends of medicine are also friends of improvement, and, fortified by the uniform experience of history, they believe that the way to prevent destructive revolution is to institute timely and salutary reform; and that if ignorance and lawlessness should triumph, it will not be by their own strength, but by the unreasonable tenacity of purpose and waste of power and influence in protecting old abuses on the part of those who pass for wise. In the struggle, that particular point may be reached when moderate and good men, seeing that they are not able of themselves to bring about desired changes, owing to the steady opposition of those who are in possession of the high places and strongholds, will confine themselves to the station of passive spectators, and take no steps to prevent or to check the assaults of the excited multitude—the particolored revolutionists; but, on the contrary, they will finally bring themselves to prefer the dangers of subversion and the uncertainty of wise reconstruction to the continuance of abuses and obstructions which stand prominently in the way of political, social, or educational reform, as the case may be.

Let us hope that the regular medical institutions of our country will profit by lessons of this kind; and, at any rate, that they will not allow it to be said that he who aspires to be an accomplished or even a thoroughly educated physician must seek outside of their walls for the requisite aids and appliances which they do not possess, or will not use, inside of them. Pathological Anatomy, Medical Jurisprudence, Public and Private Hygiene, Medical Botany, and Medical Biography and Bibliography, are on the outside or excluded list. These are not subjects of mere dry lore or of speculative inquiry: they have a directly practical and appreciable bearing, as evinced in European schools, in which each is taught from a separate chair.

The recent establishment of a new Pathological Society in Philadelphia, and the existence of similar associations which are actively at work in Boston, New York, and Baltimore, show unmistakably the opinion of the more intelligent and advancing part of the profession on the subject in this country.

ART. II.—1. *The Botanical Text Book, an Introduction to Scientific Botany.* By ASA GRAY, M.D., Fisher Professor of Natural History in Harvard University. Fifth Edition. New York. Putnam & Co., 1857.

2. *First Lessons in Botany.* By ASA GRAY, M.D. New York. Putnam & Co., 1857.

3. *Genera of the Plants of the United States; Illustrated by Figures and Analyses from Nature.* By ISAAC SPRAGUE. With descriptions by Prof. ASA GRAY, M.D. New York. Putnam & Co. Vols. I. and II., 1849.

4. *Manual of the Botany of the Northern United States.* By ASA GRAY, M.D., &c. Second Edition. New York. Putnam & Co., 1856.

DURING a conversation which we held with Sir William Hooker, the Royal Botanist of England, and a man whose name is as firmly interwoven with the knowledge of the science of plants as that of Linnæus, Jussieu, or De Candolle, the subject falling on our American philosophers, we alluded to Professor Gray. "Gray," said he, "is a man of whom any university, any country, might well be proud. Few men have ever equalled him in scientific research, or excelled him in philosophic deduction." And any one will agree with us in considering this praise well merited, on studying the works whose titles stand at the head of the present article; or the numerous, profound, and invaluable contributions which are published by the Smithsonian Institution, the Federal Government, and Silliman's Journal, from the pen of the same author. The first, third, and fourth of the works before us have a world-wide reputation: no botanical library is complete without them; no conclusions on the Natural History of our continent can be drawn without their aid.

The Botanical Text Book, now in its fifth edition, is the most complete treatise on Botany ever issued from our press. There is no work we can more confidently recommend to the use of our colleges and higher academies than this; there is none from which the practitioner will more readily glean the information he desires, or which the mere amateur will find more pleasure in perusing. As a proof of the high distinction in which this work is held abroad, we may state that for some years it was used as the class-book in the University of Edinburgh, (a compliment seldom paid to American literature, but which, we are glad to notice, has recently been extended to Dr. Wood's *Practice of Physic*,) and was only deposed when Professor Balfour, of that city, produced his own elaborate and massive treatise: a book which, however excellent as an encyclopædia of the science, and although got up in a most elegant and attractive style, wants the clearness and brevity which is so remarkable in Dr. Gray's works. The *Botanical Text Book* treats of three of the great divisions of the study,—Structural, Physiological, and Systematic Botany. These are fully and ably entered into. We cannot help regretting, however, that the author omits entirely the two vast subjects of Geographical and Palaeontological Botany. The student should certainly become familiar with these. True, geographical botany is an immense subject of itself, and to be fully discussed would occupy far more space than is contained within the limits of the *Text Book;* but a few general facts should have been inserted, pointing out the general laws respecting the different amounts of temperature, light, and moisture which give rise to the many changes in the Flora from the Equator to the Poles. And this subject of geographical botany possesses no small interest to the medical man, who, by a knowledge of it, might judge *a priori* of the nature of a climate from seeing its flora; the agriculturist, from the same data, may be led to judge of soils; the traveller recognizes his altitude in mountainous countries, and the explorer his longitude, while numerous facts on very various subjects are opened up to us. The subject of fossil or palaeontological botany always deserves notice, bearing the close relation it does to the existing state of the science, and as affording, in many instances, a clue to the development of great and valuable truths.

We are especially glad to notice that Professor Gray has lately sent out into the world an abstract of his *Text Book*, under the name of *First Lessons in Botany*. We say we are glad—we are more—for we feel sure that the intrinsic merit, the general completeness, and the cheapness of this work will of themselves act as a recommendation to it, and strike a deathblow at the existence of the numerous worthless treatises which every now and then are issued from the press to satisfy the pride and line the pocket of some ignorant and needy schoolmaster. The *Outlines* is intended as a class-book for beginners, in which the general principles of the science are not only rendered as simple as possible, but are also sufficiently enlarged upon, forming a complete grammar of vegetable physiology and taxonomy; and indeed, as far as regards the physiological part, the work is complete in itself, and taken in conjunction with the *Manual of the Botany of the Northern United States*, forms a complete library for the student of the botany of this part of our country,—the *Outlines* being to the *Manual* what the grammar and dictionary are to the classical author. The value of the *Outlines*, too, is considerably increased by the addition of a Glossary, which, besides its completeness, gives the proper accent in all instances where there might be a doubt on the subject. The illustrations in both the above works are remarkable for their accuracy and beauty—an accuracy which, so beautifully shown in the *Genera of the Plants of the U.S.*, has given Mr. Sprague the well-earned title of the most accurate of living botanical artists.

The second edition of the *Manual of the Botany of the Northern States* is also a welcome visitor. The first edition, which was more hastily written to supply a pressing want, has been almost wholly and carefully rewritten; the old plan has been preserved, but the work is a new one. Its increased size is mainly owing to the increase of the geographical area comprised in the work, as that now includes Virginia and Kentucky to the south, and passes as far west as the Mississippi River. This area gives a much more natural division to the country. The southern line divides the flora of the cooler temperate from the warm temperate region, as, except on the low coast of Virginia, very few characteristically southern plants occur north of this line. The western limit, too, while it includes some prairie vegetation, yet excludes the plants which are nearly peculiar to our great woodless plains in

Iowa and Missouri. The northern boundary, that of the United States, varies through about five degrees of latitude, and nearly embraces Canada proper, excluding the more northern Labrador flora. Although not passing beyond those limits, considerable value is added to the work by certain marks used in pointing out the distribution of the species within these limits; and to facilitate the comparison of our flora with that of Europe, the mark "Eu." is appended to the names of species occurring in both countries. Another important feature is a series of fine plates of the genera of the Cryptogamous orders of plants, six of which are by Mr. Sprague, and the other eight, illustrating the mosses, by Mr. Sullivant, who is the author of that portion of the work describing the mosses and liverworts. We believe no country can boast of a better "Flora" than the above; few can equal it. Our country contains many great minds in Botany as well as the other sciences, and where the names of Gray, Torrey, and Darlington are known, they are respected as belonging to three masters in botanical science.

We believe we have said enough on this head, and we cannot praise more than we have done. Excellence will find its own without a trumpet being blown before it; but to those desirous of pursuing the most charming of all scientific studies—a science which contributes to expand the mind, cultivate the reasoning faculties, perfect the power of observation, strengthen the body, and assist us in other sciences by pointing out the reasons for things—we would say use these works; put full confidence in them: you can find no better. And who does not wish to study botany? Every lover of nature, every one looking up through nature to nature's God, must desire to know more of His works, to know more of the lovely beauties which surround us at every step; every searcher after truth must desire to penetrate into the mysteries of those phenomena which modern science has revealed to us in the plant-life, a knowledge of which in the plant leads to the understanding of similar wonders in the animal world—ay, in man himself;—

"For in all places and in all seasons
Plants expand their light and soul-like wings,
Teaching us by most persuasive reasons
How akin they are to human things."

But too many are apt to be scared at the very name of botany—to associate its existence alone with a number of long and hardly-pronounceable names, with pages of dry detail and columns of barren facts. But it should not be so. True, there are many long names, but the mastering of these does not constitute studying botany. We have seen many a gardener or mountain guide who could give strings of hundreds of long names, and point out the plants to which they belonged, and yet know nothing of botany. Botany is a true science; the retaining of long words is a mere exercise of memory. These words are merely useful as the representatives of ideas, as the representatives of certain combinations of qualities, to which, for the convenience of scientific men, the Latin or universal language is applied, and by the use of which we point out more certainly what we mean; but they are merely names, bearing the same relation to botany that the name of an individual does to his mind. Botany is the science which treats of plants, of those first elements of life which clothed the fiery mass of this world when it originally cooled; which tells us the history of the tiny forms which first clothe the rugged rocks of the ice-bound Polar regions, and even the snow itself; of those majestic giants, like the banyan of Nerbuddah in India, a single tree of which forms a forest, under whose shade thousands of troops have rested; of the solitary residents on the isolated spots of the burning sands of Africa, storing up moisture for their own support; of the gorgeous carpets of the Western prairies and Southern llanos; of the little blue-eyed gentian, struggling for existence amid the avalanche and storm of the highland Alps; of the mighty pine-tree, with its melancholy roar, in the unexplored Northern wilds; of the tender little pink seaweed, washed on shore by the tide, and perishing ere night; of the mighty Alga, (*Macrocistis*,) riding hundreds of feet along the storm, triumphing amid the uproar; of the little "forget-me-not," raising its meek glance to heaven from out the swamp; and of the gigantic Royal Water Lily, with its flowers a foot and leaves eight feet in diameter; of the microscopic parasite in the human stomach, and of the great Rafflesia, a parasite of Sumatra, whose flower alone weighs fourteen pounds; of the minutest microscopic objects the markings on whose surfaces are only the 1-130,000th of an inch apart; and of the monstrous beds of the coal fields, the forests of a former epoch laid up as fuel for this. Such a variety of interest for study, of opportunity for research, of reason for praise, does botany bring to us! Wherever we go the science may be cultivated. Vegetable life is everywhere; the soil is filled with the embryos of plants ready to burst into existence; the air which covers it is not free from the stores of vegetable life; the waters and rivers abound with it. And such beauty is unfolded to us, such variety of shade, of hue, of form, and perfume! What pleasing associations do the lovely plants not recall! How strange their variety of life, from the little cell which is produced and dies under our observation with the microscope, to the mighty Baobab-tree of Senegal, said to be coeval with Abraham! And does man not owe feelings of gratitude to the vegetable kingdom? Does it not feed him and clothe him, shelter him from the inclemency of the weather, give him relief in pain, solace in misfortune, luxuries and necessaries, pleasures, and education itself? And is the history of these invaluable objects, their growth, development, and peculiarities to be neglected and forgotten, because the completion of the further branches of the study is embarrassed by a few Greek and Latin words? By no means. Let us overcome this small matter and plunge into a new and useful science. Let us consider the science of botany, the phenomena of the growth, life, and death of plants, and the various purposes to which they are applicable, whether in medicine, chemistry, or in any of the different arts and necessities of life. The study of this great subject is too much neglected in the colleges and schools of our country. We are a practical race of people, and are too apt to regard the study of this science as an ornamental rather than a useful pursuit, and thus we teach it generally in our ladies' schools, and send our young women out into the world with a little smattering about "Dicotyledons" and "Monogynias," calling "blue bells" *campanula*, and "chinquapins" *castanea;* but, after all, letting them learn nothing of botany. And the science is practical. The utility and advantage of botanical classification may readily be shown in a variety of circumstances. Structural botany leads to a knowledge of peculiarities, and these peculiarities we are led to classify in various groups or families, in which the genera and species are not only given with the same outward form, but possess similar properties. For instance, let a botanist examine a flower, and, though ignorant of it, he can yet tell from its character where it belongs in the scale of the vegetable kingdom; and whether poisonous, good for food, or otherwise. So also the physician, having by his careful, clear, and undeniable experiments ascertained the medical properties of one plant, will be enabled to determine the virtues of all the others in that genus, or even family.

But it is to medical men that we at present address ourselves, and on them that we would impress the importance of this study. Although we may say it is almost entirely ignored by our medical schools, yet in other countries of older standing it is fully recognized. In France, England, and Germany, the case is very different. By all the medical examining boards of England, except in the very practical examination of the Royal College of Surgeons, which is confined to surgery, physiology, and anatomy, a knowledge of botany, more or less complete, is required. Students are compelled to study it as one of the preparatory branches, and are examined in it with almost as much minuteness as in chemistry. The Boards of the Royal Navy, of the Edinburgh University, and of the Honorable East India Company, are particularly strict on this subject. Consequently all the schools have a teacher of the branch. In the German universities, where all branches are so subdivided that almost any one can be pursued by a student as a specialty, there are generally several branches of the science. For instance, in the University of Bonn, where we spent some of our student's career, Prof. Treviranus gave a course of lectures on the General

Principles of Botany, another on the Natural Families of Plants, and a third on the Peculiarities and Properties of the Flora of the Vicinity; Prof. Brandis lectured on the Anatomy and Physiology of Plants, on the Medical Properties of Plants, and gave a special course on Sleep, and the other Phenomena of Plant Life. In France the method is very similar, and so in other European countries. Here, then, is an open avowal of the importance of the study, and means provided for the full prosecution of it. We have, however, endeavored to reduce our period and amount of medical study to a minimum, and neglect, in consequence, many important branches. And we are not content in so doing. Neglecting botany, we might as well neglect chemistry, for the one is as important a guide to the materia medica as the other. Our knowledge of the properties of plants around us ought to be as great as that of the minerals. We employ a greater amount of botanical medicines, and we are more constantly thrown into situations where a knowledge of the appearance and properties of plants would be of immense practical importance. How many excellent physicians have found themselves at a loss for a remedy, when some old woman of the village came with an unknown and slighted herb which had the desired effect? How many men have become distinguished and rich (we do not allude to quacks, who do, unfortunately, often profane the name of botany) by a mere knowledge of the herbs growing around them? And how many fatal accidents by poisoning have occurred, when the medical attendant did not know that certain herbs produced certain effects, and that antidotes for their poison were within his reach, did he but know what? Our fathers in medicine were all botanists, "herbalists" as we now somewhat contemptuously style them, and they felt the full force and advantage of the study, from the practice of which they gleaned those precious truths which, even now, with our perfections in science, we can only ratify.

The origin of the study of botany is lost in obscurity. The Holy Scriptures and Homer give us the first traces of its study. King Solomon, we are told, in one of his lost books spake of trees "from the cedar tree that is in Lebanon to the hyssop that springeth out of the wall." The Magi, too, doubtless employed the learning acquired by the study as a means of influencing and controlling the unlearned. Asia and Egypt supplied Greece with its beginnings of knowledge, and among the Greeks we find the earliest systematic botanical treatises. Pliny tells that Pythagoras travelled in Egypt, and on his return wrote a work (quoted by Pliny) on the Properties of Plants, derived, doubtless, from the information gleaned during his tour. A disciple of his, Empedocles, wrote the first work on Vegetable Physiology, and in this, amid curious blunders and wonderful theories, numerous outlines of the facts elaborated by modern science are boldly traced. Hippocrates is a name under which several authors wrote about this time, and described in vague and uncertain manner numerous plants. These men, the pioneers of our science, "groping blindly in the darkness," received the name of Rhizotomæ, or "reed-cutters," as their attention was chiefly directed to the medical properties of plants. But the foundation of the great science of botany is attributed to Aristotle of Stagira, who held the difference between the animal and vegetable world to be that plants, though possessed of life, have no innate consciousness or organs of sense to know what is out of themselves, and that they were thus intermediate between animals and rocks. A disciple of his, Theophrastus, who was born in Lesbos, and flourished in the third century B.C., has left behind him a work entitled the *History of Plants*, in which he considers their origin, propagation, and anatomy, and also the phenomena of vegetable life, giving an outline of structure, which, considering his want of magnifying power, is highly wonderful. He distributes vegetables into seven classes, which are characterized by their places of growth, their generation, their use as esculents and potherbs, their lactescence, their size, and the consistence of their sap. The next botanist of consequence was Dioscorides, a Roman citizen, by birth a Greek, who wrote three hundred years after Theophrastus, and described six hundred plants. These he arrayed in four classes, founded on their use in medicine and domestic purposes, viz.—1. Aromatic, 2. Vinous, 3. Medicinal, 4. Nutritious. His labors were so great as to win for him the title of the "Father of the Materia Medica," but the value of his work is greatly diminished from his want of the knowledge of genera and optics. Contemporary with him were Antonius, Cato, Virgil, Varro, and others, who not only showed botanical knowledge, but also a considerable acquaintance with agriculture and rural economy. Pliny the elder described about one thousand different species of plants, but, like other ancient botanists, he scarcely used any other mode of arrangement than the general division into trees, shrubs, and herbs. Galen stands next as an author on Medical Botany, and after his time, except by the Arabians, who seem to have paid some attention to this branch, botany, with the other sciences, was neglected. Here and there some monk cloistered in a sequestered vale may have passed his tedious hours in such employment, but to us, on looking back, all is blank till the revival of letters in the fifteenth century, when literature had its shelter in Italy, and the works of ancient authors were republished, translated, and commented on. America was discovered, Marco Polo, of Venice, examined the treasures of Middle and Southern Asia, and Eastern Africa, and described plants from India and the Indian Sea. From that time till now, the science has progressively advanced, first, in the addition to our knowledge of the names, and secondly, of the structure and physiology of plants. Italians, Spanish, Portuguese, and Germans assisted in increasing and perfecting our knowledge, and in the seventeenth century we find the pursuit of botany fairly recognized as an independent science and study. We find now the formation of a greater number of medical schools and universities; and to show the importance of botany at this time, it would appear from all authentic documents that the first medical chair in the University of Edinbugh was that of Dr., afterward Sir Robert Sibbald, (1685,) who not being confined to any particular branch, and constituting in himself the entire Faculty, lectured on Medicine and Medical Botany; and on his subsequently confining himself to the practice of Physic, a second chair was formed by the trustees for instruction in Botany, Dr. G. Preston receiving the appointment in 1706. The whole history of this University goes to prove the general regard and appreciation of the study, and at present the botanical chair there is one of the best-paid positions for a natural historian in the world. From the period above mentioned, Great Britain claims a distinguished share in the honors of botanical discovery. The London Society for the Promotion of Science gave much attention to the subject, and their secretary, Nehemiah Grew, published his famous folio on the *Anatomy of Plants*, in 1682, a work full of new discoveries and laborious examinations. Robert Morison, a Scotchman, professor at Oxford, distinguished himself as a classifier, and formed one of the earliest systems. Shortly after him appeared a yet more distinguished man: John Ray, an English clergyman, a man whom all botanists and naturalists love and honor, enunciated the true principles of classification, and showed the sexual character of plants. With him we find the names of Gerarde, Dr. Hans Sloane, John Parkinson, of Chelsea, and many others, distant but bright stars on our horizon. On the continent, Gesner, Bauhin, Commelin, Rudbeck, and others appeared, and sent down to us, with the results of their labors, their names attached to various beauteous objects in the vegetable world, *monumenta perennia aere*. But we have neither space nor the ability to enumerate and pay individual tribute to the memory of these great men—great physicians who saw the benefit their science acquired by the knowledge of objects around them, and who scorned not to investigate anything however low in the scale of being, which they thought might aid in the furtherance of great truths. We hate to see the finger of contemptuous scorn pointed at such men, their honest labors scoffed, their piety and innocence rendered ludicrous. They are men who deserve our undying gratitude, who have assisted to build up that great temple of our art, which we, in our impatient haste, too often threaten to bring to ruin.

The 23d of May, 1707, is a day long to be remembered in the annals of botanical science. On that day in the humble residence of Nicholas Linné, clergyman of the village of Rooshoolt, in Smaland, a Swedish province, Carl v. Linné, the renowned Linnæus, first saw the light of the world.

"This man," says one of his biographers, "educated in the severe school of adversity, accustomed from his earliest youth to put a high value on verbal accuracy and logical precision, endowed with a powerful understanding, and capable of enduring immense fatigue both of body and mind, produced a most important revolution in botanical science. He improved the distinctions of genera and species, introduced a better nomenclature on the binomial method, and invented a new and comprehensive system founded on the stamens and pistils." This is the man to whom all naturalists bow the knee, to whom botanists owe the present perfection of their knowledge. But we cannot dwell on him as we would willingly do, nor more than allude to the more famous of the rapidly-succeeding line of successful laborers in the field of anatomical and physiological botany:—De Saussure, Duhamel, Link, Rudolphi, Mirbel, Kieser, Schleiden, Mohl, Darwin, and Quekett; in classification, Jussieu, De Candolle, Robert Brown, Sir J. E. Smith, Sir W. Hooker, Lindley, Babington, Torrey, and Gray.

But we consider it both of value and interest to our readers hastily to glance at these men who have paid more especial attention to the botany of our own country, those who, native-born or European, are justly entitled to the name of "American botanists." The best account of these is contained in the *Memorials of Bartram and Marshall*, by Dr. W. Darlington, of West Chester, than whom no living man has more fully identified himself with the botany of his country. American literature has not produced much of importance on physiological botany, but in the record and description of its own flora it has many works of interest and value. Of these we would mention the chief. If not the first, one of the earliest works on North American botany is that of a French botanist, Cornutus, published at Paris in 1635, and entitled *A Description of the Plants of Canada;* the author never having been in America, wrote from dried plants sent home to him. The next is the *New England Rarities* of John Josselyn, an Englishman, who resided nine years in Massachusetts, and published in 1672. He seems to have indulged in no small degree in the marvellous, as he talks of "frogs a foot high," and further states "that barley degenerates frequently into oats." Next we find, in 1680, the Rev. John Banister, who published a catalogue of plants observed by him in Virginia, and who was killed by falling from some rocks in the pursuit of his study. John Bartram, whom we may regard as the greatest of our early botanists, began to collect in or about 1730. He described more plants than any of his cotemporaries, founded the first botanical garden in the country, carried on large correspondence with the naturalists of Europe, and proved himself a shrewd and profound observer. Catesby, Clayton, Colden, Logan, Mitchell, Kalm, Kulm, and Garden next appear as workers in the field, and many of our most beautiful and valued plants bear their names as memorials of their labors. In 1773, Humphrey Marshall, another illustrious self-educated native botanist, established the second botanic garden in the village now called Marshalton, Chester county, Pa., where most of the trees remain to this hour noble specimens of his gardening skill. We fain would dwell among these noble pioneers of our science, for we feel it no fit usage of such men to pass them by with mere mention of their names. But we are compelled to use them thus rudely. Marshall's work on the forest trees of America, his *Arbustum Americanum*, may be called the first strictly American botanical work, that is, written by a Native American, and published in the country, and it does both much credit. The first work on American Materia Medica was published at Erlangen, in 1787, by Dr. Schoepf, a German who had lived some time in the United States. And now we come to names more familiar to us,—those of men who are themselves alive, or whose pupils are around us: Prof. Barton, who published the first elementary botanical treatise in this country; the two André Michaux, whose works on our oaks and forest trees form the greatest mass of our knowledge on the subject; Rich, Muhlenberg, Major John Le Conte, Thomas Nuttall, Stephen Elliot, and Frederick Pursh, all of whom have produced excellent and valuable works on special or general floras. In 1817 an eccentric naturalist, Rafinesque, published his first work on the flora of Louisiana. Of him, however, it may be said that he made such unreliable statements, and introduced such startling innovations in nomenclature, that although he possessed undoubted botanical knowledge, yet his works were rather prejudicial than beneficial to the science. *Silliman's Journal*, the Proceedings of the Philadelphia Academy of Sciences, and Torrey's first works appeared about 1820, and from this period till now, general and local floras have increased and multiplied. Eaton, Torrey, Sir W. Hooker, and Drs. Beck and Gray have given us the best and most reliable of these. Different districts of our country have been explored by different authors, and numerous monographs by various distinguished botanists have contributed valuable additions to our knowledge of the distribution of families and genera. Thus we are indebted to Dr. Torrey for a flora of the Rocky Mountains, to Dr. L. Beck for a flora of Illinois and Missouri, Dr. Brereton contributes the flora of the District of Columbia, Aikin supplies that of Maryland, and Croom of North Carolina. In 1837, Dr. Darlington published his *Flora Cestrica*, now in its third edition, and probably the best local flora ever published. Mr. Sullivant, Mr. Thomas Lea—the lamented brother of the eminent conchologist of this city—and Prof. Riddell, of New Orleans, have opened up the flora of Ohio and the Western Country. For a knowledge of the plants of Milwaukie, we are indebted to Mr. Lapham; of Delaware, to the Botanical Society of Wilmington; of Rhode Island, to Mr. Olney, of Providence; of Florida, to Dr. Chapman; of Louisiana, to

Prof. Riddell; of Missouri, to Prof. Engelmann; of Kentucky, to Dr. Short; of Massachusetts, to Prof. Bigelow and Mr. Emerson; and for the magnificent flora of New York, in two quarto volumes, published by the State, to Dr. Torrey. And yet though all this is done, much remains unknown, unexplored. Numerous workers in the fields will yet find their labors amply repaid by pursuing their investigations in our great territory. Many of the States are without their written floras; much remains to be opened up, many wondrous facts to be developed, many valuable qualities to be redeemed from obscurity. Our medical men ought particularly to bear this in mind. Some of our drugs are becoming rarer and more expensive in the market. Why? Not certainly because they are being used up, or are dying out before the progress of cultivation, but because the aborigines who knew these plants and collected them for our markets are themselves driven back and their successors recognize not the herbs which surround them. Since the days of Schoepf, some others have pursued the subject of the medical botany of this land. Barton, Rafinesque, and Bigelow have produced works on this important subject, and now our great lawgiver in medical matters, the American Medical Association, strongly recommends the study, and in its Transactions gives us noble trophies of what it has done; inspiring us with desire to follow the example. Turn over your volumes and look for yourselves. "Dr. Clapp on the Medical Flora of the U.S.," "Dr. Peyre Porcher on the Cryptogamic Botany of the U.S.," and others, are noble specimens of labor for the love of science and improvement of the co-operators.

We have already alluded to the importance of the study of botany by medical men desirous of understanding their profession. But it may be urged that in acquiring a knowledge of materia medica a sufficient acquaintance with botany is obtained. This we so far allow. Sufficient indeed to mix a pill or powder, sufficient for an elegant prescription, sufficient perchance for distinguishing between good and bad drugs; but sufficient to allow the physician to trust to his own resources in procuring a remedy, to emulate our fathers in medicine in their laborious experiments on which our knowledge is founded, we deny. And we Americans are somewhat in the position of these ancient fathers. With a wide and almost unknown territory full of vegetation, with new diseases springing up around us, and unknown and unexamined herbs amid our forests, and with the ancient remedies of our forefathers lost or of no avail, it is our duty to examine and to go on examining, experimenting, heaping up facts, with faith, patience, and perseverance, until we have gained a knowledge of all. We have heard of a theory that no disease exists in a country without an antidote springing up from the soil, and Scotch boys tell us "no stinging nettle grows without a dockin leaf close by," and we believe there is much truth in the statements. We are governed by an allwise Providence, whose desire is for our good, and who, while He gives us the means, requires us to discover and adopt them.

It is not, however, merely as an aid to the discovery of remedies for disease that we would urge the study of botany on medical students. We would recommend it to them as a primary means of mental discipline, holding the same relation to their future professional career as the study of the classics does to the development of the mind of the educated orator and statesman. The habits of observation are encouraged, the attention is arrested, the judgment brought into action, the logical powers strengthened, and method acquired by the pursuance of this branch. Then, again, it is in the vegetable kingdom that we find the first and simplest application of those great laws which govern life: in the vegetable cell we recognize the representative of that cell from which we ourselves, thinking, intelligent beings, are produced; in the vegetable phenomena we find a clue to many of the higher and more complex phenomena of the animal kingdom. And in the study of microscopic botany, the labors of Robin, Leidy, Goodsir, Ehrenberg, Berkeley, and others have shown us the importance of recognizing vegetable life, as it is distinctly proved that various diseases owe their origin to vegetable spores, a fact of monstrous importance when we come to treatment.

Besides all this, botany exerts another claim for attention on the medical man, and this is in the study of the laws of hygiene—the examination of the great laws under which the vegetable world exerts its influence on the atmosphere, by moistening or cooling it, by filling it with poisonous matters or purifying it therefrom. And a knowledge of these facts to the explorer, to the army medical man, to our pioneers in the Western wilds, should be indispensable.

We have ventured to prolong our remarks thus far at the risk of proving tedious, but we would add a few words on the study of natural history generally. To all, but more especially to those of us whose calling is exercised in the country, the study of nature offers the highest attractions. It is the cheapest, most accessible, and, at the same time, the most instructive and delightful of all studies. Its text-book is around us wherever we turn; the world of wonders everywhere holds forth its charms and fascinations—a creation of beauties, abundant, universal, and so adapted to our being that the first impulse of our childhood on being laid on the green sward is to grasp at butterflies or cull wild flowers. And this, the first, the fondest attraction of our natural being, retains, unless contaminated by the allurements of society or cares of business, its freshness to the end. Wealth may become a burden, honor an uneasiness, feasts may pall and friends may fade, but the warm green of the meadow, the soft enamel of the flower, the gentle murmur of the brook, the glorious majesty of the sun, the mellow brightness of the moon, the whole gorgeous panorama of nature remains, and the poor worm of man, who lay withering in art, revives in nature; on the brink of the tomb itself he feels a triumph over death, a consciousness of immortality which misery cannot shake nor skepticism cloud. And if a glance will afford such pleasure, what delights will not the study unfold.

And this study has become among men an honorable one. No more is the simple and enthusiastic naturalist pooh-poohed and scoffed as a madman,—"a harmless being going bug hunting because he has not spirit to follow a fox." No; he sits in high places, honored by all, respected by kings.

Do you seek for pleasure? As a naturalist you find the purest of all pleasures. For wisdom? It is here in store. Let no one view it as effeminate and pedantic. As Kingsley says in *Glaucus*, (and we wish we could quote the whole of his remarks on the subject,) "The qualifications for a naturalist are as many and lofty as were required by old chivalrous writers for the perfect knight-errant of the Middle Ages." Every mental, every bodily power is employed, all are used and exercised. What man of us will not gladly pursue this great subject, open for himself the book of nature, and explore that wondrous kingdom—

> "———— where all is formed
> With number, weight, and measure;
> Each . . . . . holds a rank
> Important in the plan of Him who framed
> This scale of beings, holds a rank which, lost,
> Would break the chain and leave behind a gap
> Which Nature's self would rue."

ART. III.—*The Cattle Plague and Diseased Meat, in their Relations with the Public Health, and with the Interests of Agriculture. A Letter to the Rt. Hon. Sir George Grey, Bart., G.C.B., Secretary of State for the Home Department.* By JOSEPH SAMPSON GAMGEE, Staff-Surgeon of the First Class, and Principal Medical Officer of the British-Italian Legion during the last war, etc., etc. London, 1857.

A Second Letter on the same subject by the same author.

IN these "bold and admirable" letters Mr. Gamgee adds the distinction of a very decided and efficient sanitary champion to his previously well-earned character as a zealous and able morbid anatomist and practical surgeon. Having the rare advantage of veterinary experience, it is not surprising that his intelligent and indefatigable energy should have led him to attack an evil which had long disgusted him, and to which a committee of Medical Officers of Health had already formally, but in vain, directed the attention of the London public.

The keen determination with which he conducted the inquiry, and his straight-forward and impressive, although scrupulously courteous manner of presenting and discussing its results, seem, at last, to have stirred up a very natural and wholesome sensation among the parties most concerned. We hope that the alarm thus happily excited by Mr. Gamgee's hue-and-cry may not be allowed to subside until it has led at least to a general understanding of the nature and extent of the apprehended mischief; and to the consequent establishment of the permanently vital public opinion and individual watchfulness which, as has been well said, must, after all, afford the best security against abuses of every kind.

In the mean time the rumors of "hog-cholera" in some parts of our own country, and of "milk-sickness" in others—to say nothing of the still-fed and strychnianized swine and cattle—and the demand and high price obtained for animal food in our large cities, admonish us only too clearly of our own liabilities to similar pests. In conning the pages of our trans-Atlantic pamphleteer, let us not imagine that his revolting pictures of diseased and decaying carcases, slipped calves and equivocal sausages, are native only to the shambles and market-stalls which he has explored and so effectually exposed.

For the purpose of facilitating the exposition of his facts, Mr. Gamgee arranges them in the following four categories:—"1st. *Statement of the existing evil.* 2d. *The inefficiency of existing laws.* 3d. *Statement of impending danger.* 4th. *An exposition of the principles on which the urgently requred legislation should be based.*"

It is unnecessary for us to dwell upon many portions of these different categories, as they are chiefly of local interest only; a few graphic passages, as we read on, may afford us sufficiently useful hints in regard to what might be looked for nearer home.

"FIRSTLY—STATEMENT OF THE EXISTING EVIL.

"The existing evil is multiple. *a.* Public sale of diseased beasts with healthy ones, in consequence of inadequate inspection of live markets and cow-houses. *b.* Inefficient inspection of slaughter-houses and dead-meat markets. *c.* Insufficient state of knowledge on cattle diseases, due, in great measure, to non-observance of the very wise regulations framed by the founders of the Royal Veterinary College of London.

"*a. Public sale of diseased beasts with healthy, in consequence of inadequate inspection of live markets and cow-houses.* It is a publicly notorious fact, repeatedly verified by my brother, that diseased beasts, in very considerable numbers, are sold in the New Cattle Market at Islington, which I inspected on Monday morning the 16th inst. The live beasts were generally extremely well-conditioned and thoroughly sound; but standing among them were three diseased beasts. One of these was emaciated and hide-bound, with abscesses in various parts of the body, particularly over the region of the head and neck.

From the clinical observations I made on diseased cattle nine years ago, I believe this case was most probably one of pyæmia following typhoid fever. A second beast was in ill health, viz. thin and feverish, but I could not make a precise diagnosis. The third diseased beast was a fat one: it was lying down, moaning, looking round anxiously at its flanks; pulse 110; respiration 45; pleuro-pneumonia.

"On Friday, the 20th inst., I several times visited the Islington Market, and found in it many diseased beasts. The most remarkable example was a row of twenty-one very small and very old and emaciated cows; several of them bore unmistakable signs of old disease,—one of them was moribund; it was standing in the throng, leaning almost its whole weight on the beast near it, striking out its head, panting for breath at the rate of forty times per minute, emitting large volumes of hot vapor from the lungs; its eyes were fixed and staring in the lean and deepened sockets; in the arteries of the extremities the pulse had ceased to beat; and out of two large ulcers the hinder extremities of the hip-bones protruded through the skin, which seemed artificially stretched over and bound down to a lifeless skeleton. From numerous inquiries in the market, I learned that such a state of things is by no means unfrequent. In reply to my inquiries, an official in the administrative department made the following statement:—'It is notorious about diseased beasts in the market: never a market without them; often beasts are disgraceful to look at,—certainly unfit for human food: could not say why the inspector did not seize them.'"

After some further remarks upon the inadequate inspection of the cattle markets, and upon the number of cows becoming diseased in the London cow-houses and sent to the cattle market or to the slaughter-houses of the metropolis, he describes his observations in the "slaughter-houses and dead-meat markets."

"On Monday, the 16th inst., I inspected one of the slaughter-houses at the New Islington Cattle Market. In it I saw five carcases—three of oxen, two of sheep. One of the latter was of magnificent shape and condition, so far as fat was concerned, but the whole carcase had a uniform dusky red color, evidently the result of general infiltration with bloody serosity. The carcase having been trimmed and completely dressed for the butcher, I had no means of inspecting the viscera. Two of the oxen were much emaciated, and had apparently died from typhus or typhoid fever; they presented numerous bloody extravasations in the subcutaneous, inter-muscular, and sub-pleural cellular tissues. I should have required to see the viscera, in order to state accurately the nature of the disease, but they had been removed. The third ox was large, moderately fat; pleuro-pneumonic. I carried away the lungs of this beast; they were infiltrated with solidified plastic matter in almost their whole extent; so that, whereas their average weight should have been about eight pounds, it was twenty-seven pounds. The disease was in its acute stage. Although the carcase had been very skilfully trimmed and dressed, the flesh in the walls of the chest and abdomen bore unmistakable marks of disease. The slaughter-man stated that these carcases would be conveyed to the city markets, where they would be *sold as food.* In his opinion those carcases were not diseased, nor would they be considered such by the city meat-inspectors. He even maintained that the lungs were not diseased; he said they only contained congealed healthy blood!

"On Sunday, the 23d inst., at 5 P.M., I inspected the same slaughter-house, where several men were busily at work. Twelve very fair recently-dressed carcases were hung up—two of sheep, ten of oxen; additionally three diseased carcases, two of which were dressed but quite warm; a third was in process of *trimming.* These three were very old, extraordinarily lean cows, destitute of the least particle of fat; the flesh was pale, nearly white, extensively ecchymosed, the cellular tissue inflated with gas; in the buttocks of the beast which was being trimmed were huge masses of putrid, bloody, and disintegrated muscle,—the whole appearances were those of advanced typhoid disease. From two of these cows two calves, nearly at full period, had been removed; they were now hung up, and would, from all I have seen in Newgate Market, and personally learned, no doubt be sold in that market, or cut up for sausages. Firmly convinced that all this diseased meat was unfit for human food, I sought for some official all over the market, and in the clerk's office, but I could find none; consequently, to the desecration of the Sabbath was added the preparation of diseased food for the people, without any chance of the merited chastisement being inflicted. Such a system must act as a premium to knavery.

"So far as I have been able to ascertain, the slaughter-houses in the New Cattle Market are exempt from inspection: the clerk of the market so informed me, and he added that he regarded those establishments as private, inasmuch as though the buildings formed part of the public market, they were let to private individuals. If such be the fact, and I believe it practically is so, a premium is offered to sending diseased beasts to the cattle market; for the inspection of live stock being lax, and the slaughter-house exempt from supervision, the greatest facility is offered for disposing of diseased beasts and preparing their carcases for the butcher, with all those arts of trimming, dressing, and polishing, which are well known to veil appearances of disease, so as to beguile the inexpert, to facilitate a commercial fraud, and introduce the seeds of disease, and not unfrequently actual poison, into the unhappy individuals who unconsciously partake of the meat for the sustenance of their lives."

Again:—

"On Saturday afternoon, the 22d inst., I visited Newgate Market. The establishments of the large salesmen were all closed, and at numerous little shops meat was being sold, chiefly by men of disreputable appearance, to poor persons. The quantity of diseased meat, most unquestionably unfit for human food, was very large; what I saw in half an hour would have laden a single-horse cart: among other specimens, I saw, at the back of a little dark shop, a very thin, pale fore-quarter of beef, extensively ecchymosed, for which I was asked three pence per pound; in another place a saddle of mutton, the muscle of which was pale and pappy, the scanty fat, moist, and deeply tinged with the characteristic yellow of bile; many legs of mutton and huge pieces of beef were either in an advanced stage of putrefaction or bore unmistakable marks of organic disease. I sought about the market for officers, but I only found the beadle in his closet; the meat-inspectors were nowhere to be found, and I reluctantly made my way to the meeting-room of the Medical Society of London, to relate the scene of filth, fraud, and negligence which I had witnessed."

His discussion of the second and third propositions of his list need not occupy us here, although it is well sustained, and is sufficiently suggestive, as to the inadequacy of the inspection-laws complained of, to afford valuable hints to the municipal solons on this side of the ocean. Passing as well over them as over the first part of the fourth category, which relates solely to the prevention, by quarantine enactments, of the threatened invasion of the *murrain* or contagious typhus, through the importation, from the continent, of infected cattle or of infected raw-hides, we conclude our quotations with the paragraphs which treat especially upon the question of the effect of diseased meat upon those who use it in their food.

"A second no less urgent call for effective legislative enactments is the vast amount of diseased meat consumed for food by the population. Here it becomes of first importance to consider what is the effect on man of eating meat from an animal that has died or been killed with disease. Numerous authorities attest* that such alimentation may be and often is productive of the most

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* "*D. Meier*, in Archiv für Thierheilkunde von der Gesellschaft Schweizerischer Thierärzte, Band xii. heft, 2, s. 148. *Albert*, k. 6. Landgerichtsarzt zu Enendorff Henkes Zeitschrift für Staatsarzneikunde, 22r. Jahrg, 1842, 3s, heft, s. 185. Vesicular Disease contracted from Sheep, by *George Burrows*, M.D., F.R.S., in *Med. Times and Gazette*, and *Veterinarian*, 1856. On the Production of Tænia considered in relation to public Hygiene, by Dr. *Riecke*, of Nordhausen, in Henle's Zeitschrift, *Edinburg Med. Jour.*, October, 1857. 'Case of Tape-worm occurring in connection with the eating of measled pork,' communicated by Dr. *W. T. Gairdner* to Medico-Chirurgical Society of Edinburgh. Clinical observations of effects of eating measley pork and unsound meat, by Dr. *Gibbon*, Dr. *Challice*, and others, in *Report on Unwholesome Meat*, by Committee of Metropolitan Association of Medical Officers of Health. Ueber das Fleisch der Schlachtbaren Hausthiere in Gewerblicher und Sanitäts-polizeilischer Beziehung. Ein Handbuch von Veterinair Assessor Hildebrandt. Magdeburg, 1855, s. 144. On the consignment of Sick Cattle to the Butcher, by Mr. Hosburgh, of Dalkeith, *Vet.*, 1842. Eduardo Turchetti in Archiv für Thierheilkunde, Band xii. heft, 1, Zurich, 1843, and Gaz. Méd. de Paris, 6th Aug., 1842. Hering Leistungen in der Thierarzneikunde, p. 66. Vermeintliche Brechweinsteinvergiftung bei Menschen in Folge des Genusses von Fleische eines Zuvor mit Brechweinstein behandelten Ochsen-Mitgeheilt vom Herausgeber in Centraltzeitung für die Gesammte, Veterinärmedizin, herausgegeben von Dr. Johann Martin Kreutzer; Vierter Jahrgang; Erlangen, 10 Mai, 1854, s. 74, und Forts. Umschau auf dem Gebiete der Staatsveterinärmedizin von Dr. Johann Martin Kreutzer in Centralzeitung, supra cit. Beitrag zur Erledigung der Frage, ob der genuss des Fleisches Milzbrandkranker Thiere, schadlich sei oder nicht. Dr. Rosenthal, in Caspar's Viertaljahrschrift für gerichtliche und öffentliche Medizin, 1854, Sweites Heft.

"Canstatt's 'Jahresbericht über die Leistungen in des Thierheilkunde' in Jahre, 1853, s. 65, und in Jahre, 1854, p. 61. Dr. A. Neuman, 'Ueber den genuss dess baneful results, even unto speedy death. The fact that many persons have often subsisted on animal food of the worst kind, is no more an argument against the injuriousness of such alimentation than would be a plea for the harmlessness of a cholera or intermittent-fever atmosphere, founded on the fact that a large number of persons may breathe it without apparent suffering. The fair presumption is, that from impure materials the sustenance of the human body cannot be derived without risk ; and, accordingly, experience teaches, that although by the marvellous organic and functional provisions of the animal economy, injurious influences from without are, in great measure, counteracted, yet impure air, water, and solid aliment cannot be introduced into the system without weakening the vital powers, and often without the most disastrous immediate results. Moreover, it is most fair to argue that the number of cases of illness referable to the eating of diseased meat is even much greater than that recorded in the annals of science, it being impossible in very many instances to trace back the causes of a disease and to ascertain what kind of animal food has been partaken of.

"It is perfectly certain that most sausage-makers use up the diseased parts, which even the poor would not buy; the frequenters of eating-houses, particularly in some neighborhoods, are largely supplied with the best-looking parts of diseased beasts; and even in good society no guarantee exists against such occurrence, beyond the honesty of individual purveyors. And be it not imagined that because the hind-quarters of a beast that has died with typhus, or the fore-quarters of a fine fat young cow that has died with puerperal fever, may chance to look well, therefore they are harmless as food. The poisoned blood has circulated through every tissue, and, besides its dose of animal poison, it has been the carrier of the medicinal substances that may have been administered to the beast before death. I have supplied reference to a case of poisoning in man from eating the flesh of an ox that had been treated with tartarized antimony; and Professor Macadam, of Edinburgh, has experimentally proved that strychnine is discoverable, and in notable quantity, in the tissues of a dog that had been fed on the flesh of a horse killed with strychnine. It is a fact, which I can produce in evidence, that a cow-keeper at Chelsea would not let a veterinary surgeon continue to give sulphuric ether to one of his sick cows because it had been smelled in the milk by one of his customers. Other drugs were substituted, health did not return, and in the regular course, after having supplied its diseased and medicated milk, the beast was sent to the slaughterer, and thence partly to the sausage-maker and partly to the butcher!

"An aspect of the case not to be lost sight of is, that this traffic in diseased

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Fleisches Kranker Thiere,' in Het. Repertorium Tydschrift voor de Geneeskunde in al haren Omvang, Leiden, 1853. Professor John Gamgee on 'Unwholesome Meat,' in Scotsman, 28th Feb., 1857. Congrossi Acta Erudit. an. 1713–14, Malad. Epiz. p. 125. Anleitung den Gesundheitszustand und die Krankheiten der Schlachtbaren Hausthiere im lebenden wie geschlachteten zustande zu erkennen von Königl. Regierungs. Departements, Thierarzt zu Breslau, F. Grüll, Breslau, 1848. Verheren, 'Sur la vente de la chair des animaux atteints de certains maladies.'—Rapport fait à l'Académie Royale de Médecine de Belgique, *vide* Recueil de Méd. Vét. 1847, p. 851, *et seq.*"

beasts is a most dishonest one; that the majority of those who are engaged in it know it to be such, and employ every art to deceive the population, the poor part of which most grievously suffers. Assuming that every one will admit the evil is one of the most enormous magnitude and seriousness, I shall now proceed to consider the principles on which legislative enactments should be based to arrest it.

"In the first place it is important to establish that the flesh of animals dying from or with disease is not invariably prejudicial to man: in many cases its injurious effects are extreme, in others they do not appear. Hence the necessity of defining the line of demarcation; because it is a great *desideratum* to lessen the loss from disease to cattle-breeders and dealers, and to allow a cheap article of food for the population, so long as such advantages are not attended with counterbalancing evils. It is a curious fact, of great practical moment to be known, that the extent in which the flesh of diseased animals is injurious to man is not in exact proportion to the degree in which the disease is fatal to themselves. Thus: whereas, oxen affected with pleuro-pneumonia frequently die in a few days, their carcases may be eaten—the actually diseased parts excepted—with comparative impunity; but the flesh of malignant anthrax, of the cynanche maligna of pigs, of puerperal fever, and gangrenous erysipelas, is capable of producing the most disastrous consequences, if partaken of as human food. Moreover, all parasitic affections affecting the edible parts of animals are most serious; because scientific experience has amply demonstrated that men partaking of them become themselves infected with worms; the cœnurus cerebri of the sheep, and the cysticercus cellulosæ of pigs, develop into the tænia in the dog and man. These facts render absolutely necessary the inspection of live and dead meat markets by persons endowed with the knowledge, which only experience, obtained carefully with the lights of science, is capable of imparting."

The second letter of Mr. Gamgee is supplemental in its character; and, although ably and efficiently seconding his first appeal, embodies no new facts of sufficient special importance to justify a further notice of its contents.

These pamphlets, and the discussion which grew out of their publication and still continues in the journals of the day, cannot fail to stimulate—what is always beneficial—a great deal of well-directed and intelligent inquiry as well as strictly scientific investigation, whatever the result upon the legislative action of the country. The hygienic question may be regarded as only just begun, notwithstanding the labors of Soumille Renault, Greenhow and others, on both sides of the British Channel. We hope to be able ere long to approach it once more with data more definite and abundant than has yet been placed within our reach, above all in its relations with American experience.

ART. IV.—*A Descriptive Catalogue of Preparations illustrative of the Diseases of the Ear.* In the Museum of JOSEPH TOYNBEE, F.R.S. London, 1857. pp. 127.

To Mr. Toynbee belongs the credit of being the first to investigate the diseases of the ear upon pathological principles. His labors were commenced in 1839, and have been zealously continued up to the present moment. The present brochure comprises a descriptive catalogue of 1659 dissections, involving an almost inconceivable amount of labor, to say nothing of the expense of the subjects and of the means of preserving so many preparations. Of these dissections 272 relate to the diseased ears of deaf persons the history of whose cases was known to Mr. Toynbee; 223 to the diseased ears of deaf persons of whose cases he had no knowledge; 654 to diseased ears to which no history was attached; and 510 to healthy ears. The following are the results which Mr. Toynbee has obtained from these researches:—

"I. The discovery of the existence of osseous tumors in the external meatus, and their structure.

"II. The detection of the presence of molluscous tumors in the external meatus; a disease which, in consequence of the accompanying discharge of mucus, has hitherto been confounded with 'otorrhœa.'

"III. The abolition of the terms 'otitis' and 'otorrhœa,' and the substitution of names indicating the tissue affected and the peculiar nature of the affection.

"IV. The discovery of the existence of the dermoid layer of the membrana tympani, which plays so important a part in the diseases of that membrane. It was previously supposed that the epidermoid layer was in direct contact with the fibrous layers.

"V. The ascertaining of the true relations of the two fibrous laminæ of the membrana tympani, and the existence and offices of the 'tubular tensor tympani ligament.'

"VI. The construction and application of the artificial membrana tympani in cases of perforation or destruction of the natural membrane.

"VII. The demonstration that the functions of the ossicles are analogous to those of the iris, modifying the access of sonorous vibrations as the latter does the undulations of light, attuning the labyrinth for the reception of either loud and harsh, or very low and delicate vibrations.

"VIII. The establishment of the existence, as a disease, of membranous and osseous ankylosis of the stapes to the fenestra ovalis, one of the most common causes of deafness.

"IX. The proof that the Eustachian tube remains always closed, except during the momentary act of swallowing, when its muscles cause it to open.

"X. The use of the 'otoscope' as a means by which the condition of the

Eustachian tube may always be diagnosed without the use of the Eustachian catheter.

"XI. The various diseases which give rise to caries of the petrous bone, and implicate in their progress the dura mater, the cerebrum, and the cerebellum, have been described, their nature and extent indicated, and means for their amelioration suggested."

Mr. Toynbee has published numerous essays and papers on the morbid anatomy and pathology of the ear, and he is now engaged in delivering an elaborate course of lectures upon the subject, which, when completed, will present the most valuable and scientific body of facts on aural medicine and surgery that has yet been given to the public. We shall hail the reprint of these lectures in this country with much pleasure.

ART. V.—*Ts'ün T'ai San Lun.* "*A new Description of the entire Body.*" By BENJ. HOBSON, M.B. Published at the "Wai Oi" Hospital, Canton, China.

THE book whose uncouth title heads this article is an octavo volume of 152 pages, printed in the Chinese character. It is an epitome of the principal facts of anatomy and physiology as they are known to the profession in Europe and America. Beginning at osteology, the various structures of the system and the functions of the organs are described, and practical remarks on medicine and surgery are introduced. The treatise concludes with an account of the development of the fœtus in utero, and some of the accidents of parturition. It is illustrated with numerous woodcuts—copies of those in common use in modern works on anatomy and physiology.

It is not easy to appreciate the difficulty of transferring a science into a new language where a nomenclature has to be invented and words applied to the description of objects hitherto unknown. This was the labor undertaken by Dr. Hobson, for his work is the first attempt to introduce to the inhabitants of the celestial empire a true account of the structure and functions of the human system. That he has succeeded in his effort to a very encouraging extent is shown by the estimation in which his book is held by intelligent natives. A large edition has been published by a wealthy native merchant, with an introduction acknowledging its superiority, yet taking exceptions to some parts as altogether chimerical.

The father of Yeh, the present Governor-General of Canton, published a very fine edition of the plates. They make eight sheets, a foot wide by three long, and are a complete set of anatomical plates. A higher compliment could not be paid to any book, especially one of foreign origin, for it must be remembered that educated natives look with profound contempt upon anything which comes from the "barbarian or red-haired devils."

The benefit which Dr. Hobson has attempted to confer upon 300,000,000 of the human family can only be estimated by considering that they know nothing of anatomy and physiology, and that not even an attempt is made at the practice of surgery. Space does not permit us to enlarge upon the general state of the profession and the practice of medicine among our antipodes. Of this more anon.

ART. VI.—*A Dictionary of Medical Science; containing a concise explanation of the various subjects and terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, etc. etc., with French and other Synonyms.* By ROBLEY DUNGLISON, M.D., LL.D., Prof. of Institutes of Medicine in the Jefferson Medical College. Fifteenth edition; revised and greatly enlarged. 8vo, pp. 992. Blanchard & Lea, Philadelphia, 1857.

PROFESSOR DUNGLISON'S Medical Dictionary has reached its *Fifteenth Edition!* What more need be said in its praise? The work is a monument of patient research, skilful judgment, and vast physical labor, that will perpetuate the name of the author more effectually than any possible device of stone or metal. Dr. Dunglison deserves the thanks not only of the American Profession, but of the whole medical world. The present edition, we are told in the Preface, contains an addition of *six thousand subjects and terms;* how and where they have been obtained are questions hardly less puzzling to those of us whose business it is to keep up with the current of medical literature, than to him whose reading is confined to the text-books of the schools.

ART. VII.—*General Therapeutics and Materia Medica; adapted for a Medical Text-Book; with Indexes of Remedies, and of Diseases and their Remedies.* By ROBLEY DUNGLISON, M.D., LL.D., Professor of Institutes of Medicine, etc., in Jefferson Medical College; formerly Professor of Materia Medica and Therapeutics in the Universities of Virginia and Maryland, and in Jefferson Medical College. Two vols. 8vo, pp. 542 and 539. Sixth edition, revised and improved, with one hundred and ninety-three illustrations. Blanchard & Lea, Philadelphia, 1857.

IN announcing a new edition of Dr. Dunglison's General Therapeutics and Materia Medica, we have no new words of commendation to bestow upon a work whose merits have been heretofore so often and so justly extolled. It must not be supposed, however, that the present is a mere reprint of the previous edition; the character of the author for laborious research, judicious analysis, and clearness of expression, is fully sustained by the numerous additions he has made to the work, and the careful revision to which he has subjected the whole.

Original Communications.

ART. I.—*Some Remarks on Cataract.* By C. S. FENNER, M.D., of Memphis, Tennessee.

I AM not aware that we have any statistical records going to show that cataract is more common in one country or section of country than another, or that any particular class of persons, sex, color, or those following any specified occupations, are peculiarly liable to it. Mr. Mackenzie remarks,—"In the early years of my practice I met with a greater number of stocking-weavers affected with cataract than of any other single trade." In the later editions of his work, he does not say that from more extended observations he has found the unusual prevalence of cataract among this class of laborers to continue; hence we may conclude that the greater number of cases occurring among stocking-weavers for a limited time was accidental. Cataract is frequently met with in the Southwest. I have never seen a case other than traumatic that I could with certainty attribute to any particular cause. I believe it to be the result of defective nutrition, independent of inflammatory action. Capsular cataract I regard as always the result of inflammation. The disease is evidently hereditary: according to my observations the mother is more apt to transmit the tendency than the father, and to her daughters rather than to her sons. To distinguish cataract from incipient amaurosis, the catoptrical test is undoubtedly the best, and should always be resorted to when there is the least doubt in regard to the nature of the disease.

Prognosis.—It is a very common opinion with the public at large, and prevails to a considerable extent among the medical profession, that cataract is a disease of but little importance; that by a slight operation the obstruction to vision can readily be removed and sight restored, estimating too lightly the danger of an operation for the removal of cataract upon so delicate an organ, from changes produced by subsequent inflammation. It is always best to assure patients with cataract that the result of efforts for relief cannot with certainty be foretold; that according to the experience of the most skilful surgeons, not more than from one-half to three-fourths of those operated on recover useful vision; and sometimes the successful results are even less favorable. Dr. Tartra says,—"It is generally thought that two out of five patients operated on for cataract recover their sight." M. A. Saez, of the General Hospital of Madrid, reports 525 operations for cataract, of which 84 failed. Of the 441 cases reported as successful, I suppose he includes all in which vision was improved. His statistics would have been more satisfactory had he stated the number of entirely successful cases, and the number in which the improvement of vision was but partial.

Professor Roux reports 115 patients operated on for cataract, of whom 73 recovered their sight. Daviel "operated on 34 cases; 17 of which were perfectly restored to sight, 8 saw indifferently, and 9 received no benefit." M. Sichel furnishes, during a period of nine years, a record of 1026 operations on 641 patients; of which 783 succeeded, 114 were partially successful, and 117 failed entirely.

If patients with cataract are apprised beforehand of the dangers attending an operation, and the consequent uncertainty of the final result, they will be better prepared to submit to disappointment in case of failure, and will be less disposed to reflect on the operator or attribute to him a want of skill. On this subject Mr. Mackenzie's remarks are very appropriate. He says,—"With regard to the prognosis, inclusive of the probabilities of cure, practitioners are too much in the way of raising sanguine hopes in the minds of patients affected with cataract, that by surgical operations on the eyes their sight may be almost perfectly restored, not weighing with sufficient consideration the frequency with which other morbid changes in the organ of vision are associated with this disease, especially in advanced life, such as dissolution of the vitreous humor and imperfect sensibility of the retina. The dangers, too, attending the operations for cataract are much too lightly estimated in pronouncing an ultimate prognosis. The risk of a badly performed operation, and that of disorganization from inflammation and other causes, after even the best-performed one, are too much left out of view." He further adds,—"In the practice of one thoroughly acquainted with eye-diseases, able to discriminate the cases fitted for extraction and those fitted for division, able to perform those operations well, and careful and skilful in the after-treatment, I should think three-fourths of those operations would recover useful vision, two-thirds excellent vision."

Patients with cataract often express considerable surprise when told that there is any doubt in regard to the final result of an operation, and that it is necessary for them to submit to a rigid course of treatment to allay subsequent inflammation and give them the best possible chance for recovery. While penning these pages, an elderly lady, with double cataract, arrived here on the cars on Friday, called at my office the same evening, wished an operation performed the next morning, and had made arrangements to return home on Monday. I declined attending her case unless she would remain at least a month, and longer if necessary. She went home, promising to return in a short time prepared to stay as long as the necessities of her case required.

I have occasionally succeeded in making a perfectly clear pupil, with but little improvement in vision, although previous to the operation the perception of light and the mobility of the iris seemed to indicate considerable activity of the retina. With me the chances of success have diminished after the age of fifty, while a large proportion of operations on persons under that age have been entirely successful. After the age of sixty-five or seventy, I think the prospects of a cure more favorable than in middle-life. Females of advanced age, according to my experience, do not bear operations for cataract as well as males, being much more liable to subsequent chronic internal inflammation, aggravated by atmospheric influences.

Medical treatment of cataract.—Occasionally our journals contain rereports of cases of cataract cured by medical treatment alone. Most of such reports are from men who have not had large experience in eye-diseases, and a reasonable inference may be drawn that they have been mistaken in regard to the true nature of the disease. If the history of such cases has been given, we find the opacity generally preceded by inflammation, and is most likely caused by an effusion of lymph in the pupil, covering the entire capsule, producing spurious cataract. If true lenticular cataract ever disappears from the result of medical treatment, it seems strange that cases of the kind should not occasionally come within the notice of such men as Beer, Leport, Denonvilliers, Gosselin, Mackenzie, Lawrence, Dalrymple, Sichel, Desmarres, Hays, Gross, and many other eminent surgeons, whose professional standing and extended experience would seem to preclude the possibility of an erroneous diagnosis.

Seasons of the year best adapted to operations for cataract.—Most English and American surgeons pay but little attention to the choice of seasons in their operations for cataract, while the Germans and French regard it as a matter of primary importance. In this latitude, I am satisfied that some seasons are much more favorable for all severe operations on the eye than others, and when I can conveniently control the time, I would select the months in the following order: September, October, November, May, June, and the first two winter months. February, March, and April are peculiarly unfavorable in this climate, owing to the frequent atmospheric changes, and the great tendency to rheumatic affections during these months greatly increasing the risk of inflammation. Steady, dry, cold weather is not particularly unfavorable, but we rarely have that condition of the atmosphere for any considerable length of time. Mr. Tyrrell says,—"I am perfectly satisfied that the operation of cataract is most hazardous during the cold and damp seasons; so much so, that it is only under very peculiar circumstances that I ever operate in the period from October to March. The proportion of unsuccessful cases has been very much lessened since I have discontinued to operate in cold and damp periods of the year." Dr. Schlagintweit, of Munich, an old pupil of Beer, remarks,—"If the weather were mild in the months of October and November, I would not decline to operate; but in frosty, or in keen or variable cold weather, or in the heats of summer, I would never think of it." Dr. Gulz, of Vienna, says,—"We have no formal or positive rule not to operate at any period of the year. But then, as a matter of fact, we do not like to do it during the unfavorable and trying seasons of the year, nor, in fact, do we then operate much. Good and steady weather, with an agreeable temperature, is what we desiderate; and everything that interferes with this—the cold and snowy weather of winter, the piercing and chilly blasts of spring, or the very hot season, or a very wet one—we try as much as possible to avoid; and hence May and July, September and October, are the months we prefer."

Should an operation be performed when there is cataract in one eye only, vision in the other being perfect? In young persons with single cataract, I usually advise an operation, if the disease is uncomplicated and the general health and constitution of the patient good. Cataract in one eye is a considerable blemish, and is very annoying, particularly to females. They are unable to see objects on that side distinctly; they have to turn the head toward the shoulder in conversing with persons, or viewing objects on the blind side, which gives them an awkward air; besides, they are more liable to injuries. Severe inflammation rarely follows operations for cataract on healthy young persons, consequently the risk of destructive inflammation extending to the sound eye is too small to be calculated on. The objection often made to an operation, that the difference in the focal distance of the two eyes, after the lens in one has been removed, will give rise to double vision, I have found not to hold good. Patients on whom I have operated in such condition have uniformly expressed themselves as gratified with the result: the deformity has been removed, and the scope of vision extended. In young persons the eye, after the removal of the lens, gradually accommodates itself to the loss, and patients often have very good and distinct vision without the aid of cataract-glasses: the younger the person the more perfect the sight becomes without magnifiers. Very few persons have the two eyes of precisely the same power, yet very few have double vision. Mr. Mackenzie says,—"It is rarely the case that the two eyes, even in the same person, correspond in refractive power.

The left, partaking, perhaps, in the tendency to weakness and disease which so frequently attaches itself to the left side of the body, is often found to be short-sighted. Few are aware of the disparity which often exists between their eyes, until some accidental circumstance leads them to make a comparative trial of the two; and it is by no means uncommon to meet with individuals who, on making the experiment, have discovered that one eye was greatly defective, or even entirely blind." If the two eyes of the same person rarely correspond in refractive power, and yet vision be good, surely the fear of diplopia should not deter one from the removal of an opaque lens. The improvement in the scope of vision, the removal of a serious blemish, and possibly the prevention of the disease from extending to the sound eye from sympathetic action, and the small risk of destructive inflammation, induces me to advise an operation in such cases. In young persons a cataract often exists in one eye for many years without extending to the other, while in middle and advanced age if one eye becomes cataractous, the other rarely remains good more than two or three years, and sometimes not as many months.

Surgical operations for cataract.—Extraction, displacement, and division are the three operations performed for the removal of cataract, and each method is modified according to the pecularities of the case, or the views and skill of the surgeon. When the lens is soft, as is generally the case in young persons, division is the most appropriate operation. A free opening should be made in the central portion of the anterior capsule, and the needle repeatedly passed through the soft lens without displacing it from its natural position. Care should be taken to make the capsular opening free and leave no part floating in the pupil. This is sometimes difficult, as the membrane is transparent, very elastic, yields before the needle, and although a large opening may be made, the fragments, retaining an attachment, rise up, float in the pupil, inflame, become thickened, opaque, and thus give rise to secondary capsular cataract.

M. Malgaigne, in 1842, advanced the opinion that the true capsule never lost its transparency, but that the opaque matter was deposited on its lenticular surface. This opinion has been controverted, and has given rise to much discussion, in which Stellwag, Sichel, Gnepin, Szokalski, Haring, Bosck, and A. Richard have taken an active part. Stellwag has microscopically examined about fifty capsular cataracts, and in every instance he states that the result confirms the opinion first advanced by Malgaigne. I have always found that in traumatic capsular cataract the membrane is much thicker than natural, tough, and its elasticity gone or very much diminished; the anterior surface has always retained its natural polish, while its posterior side is rough; an evidence that the thickening is caused by a deposit on the lenticular surface of the membrane. In couching, the anterior capsule is usually displaced and carried down with the lens; in extraction, the passage of the lens through the opening made in the capsule generally destroys the membrane to its circumference. Secondary capsular cataract will occasionally occur after each of the operations for the removal of the lens. I have seen the edges of large rents in the anterior capsule come together and unite, forming a dense white cicatrix, with opacity and thickening of the membrane, so as almost entirely to destroy vision.

Displacement.—When the cataract is hard, couching is the operation generally preferred by American surgeons, although by most English and German authors it is placed lowest in the scale. My own experience in displacement has not been so favorable as that reported by some American operators. Dr. Hewson, in his edition of Mackenzie, quotes from Dr. Pancoast, stating that he has operated by lateral displacement "in about twenty cases of hard cataract, without any permanent failure." Dr. Nott, of Mobile, in the *New Orleans Medical and Surgical Journal*, vol. xii., No. 2, gives a flattering account of the result of his operations for cataract by displacement and solution. He says, "I have now been practicing in Mobile nearly twenty years, and during this time have had occasion to operate very frequently for cataract,—very few cases of which have been congenital and very few under adult age,—and though my statistics have not been carefully kept, I am satisfied that four out of five of the cases operated on have been soft, and not a few milky. To this fact I attribute a degree of success in my operations which is remarkable, for I do not pretend to any peculiar merit as an oculist. I have always commenced my operations upon the presumption that the cataract was to be a hard one, and if so, my plan is to displace it in the usual way. I generally find the lens too soft to bear the pressure of the needle, and have broken it up and left it to be absorbed *in situ*. I really approach a case of cataract with more confidence of success than any capital operation in surgery. The question arises, is there anything in our climate or other local circumstances which can explain this peculiarity of our cataracts, or is it chance which has thrown so large a portion in my way?" My experience differs somewhat from Dr. Nott, in reference to the relative frequency of soft and hard cataracts. I have repeatedly had occasion to operate on cases of this disease, from the eastern and southeastern parts of Mississippi and the contiguous counties of Alabama, and I can now call to mind but few cases of soft cataract. Semi-soft I have found more common than any other form; either the entire lens, or the central part having sufficient firmness to be moved before the needle when that instrument has been used. Dr. Nott is well known to the profession as one of our ablest surgeons, and doubtless uses the needle with great skill; but I am inclined

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to think his degree of success must be attributed to two causes, namely, first, the great number of soft cataracts chance seems to have thrown in his way, the removal of which by solution is rarely followed by destructive inflammation; and, secondly, to the fine climate, pure air, and equable temperature of Mobile during the winter and spring months, the period of year that patients from the country, tributary to Southern seaport cities, usually leave home for surgical operations. That a cold, damp, and changeable atmosphere is prejudicial to patients who have been operated on for cataract, is proved by statistics furnished by M. A. Saez, of Madrid, who states that in the spring of 1842 he had fifty-three cases under treatment; thirty-seven were in a dry, warm, and comfortable ward, and sixteen in one that was cold and damp. Of those in the first-named ward, thirty-one were cured; in the latter, only eight. In my operations for cataract by displacement, I have often had to combat a subacute chronic internal inflammation, sometimes coming on several weeks after the operation, and seemingly induced by atmospheric influences. The presence of a hard lens in the vitreous humor in some instances causes irritation, followed by slight redness of the conjunctiva, inability to bear light, increased secretion of tears, a sensation of fulness in the eye, soreness to the touch, and pain at times extending to the terminal branches of the fifth pair of nerves. Iritis may supervene with effusion of lymph in the pupil, but generally the pupil remains clear, the vision gradually fails, until the eye becomes almost amaurotic. I have had this result to occur most frequently in delicate, aged females. Mr. Lawrence remarks that "internal inflammation commencing in the iris, and proceeding slowly, is a common occurrence after depression;" and Mr. Mackenzie, that "chronic inflammation of the internal textures of the eye is a frequent consequence of depression or reclination. It is not attended by much pain, but prevents the eye from ever attaining a degree of healthiness sufficient to render it useful. The patient, perhaps, retains a considerable degree of recovered sight for some weeks after the operation; but epiphora, varicose dilatation of the external blood-vessels of the eye, and in general a contracted, but sometimes a dilated pupil supervening, the sight becomes weak, and in a few months is extinguished." I have repeatedly had cataract patients return to their homes able to see to read fine print with ease, yet in a few months scarcely able to walk about, and I have witnessed the same final termination in those who have been operated on by experienced surgeons of the North and East; they returned home with good vision, but this gradually failed them, until they became amaurotic. Such being the occasional result, no case of cataract should be reported as cured, unless the state of vision is known six or twelve months after an operation; and if operators would keep their patients in view for that length of time, the final result of their operations, I am inclined to think, would not be so favorable as they sometimes report.

Displacement through the cornea.—In the early years of my practice I performed some nine or ten operations for cataract by displacement, by introducing the needle through the cornea, believing a wound of that part of the eye to be less likely to induce inflammation than a similar one through the sclerotica; but I have entirely abandoned that mode of operating. The point of the needle does not have sufficient play; the lens cannot in every instance be carried sufficiently deep into the vitreous humor to break up its attachments, particularly at its lower edge, so that if pushed down it is apt to rise again; the anterior capsule cannot be lacerated with the same case as in the operation through the sclerotica, and it is very difficult to remove shreds of capsule remaining in the pupil.

Extraction.—To remove a hard opaque lens entirely from the eye is undoubtedly the most perfect, and, when it can readily be accomplished, the preferable operation, as it does not interfere with the structure of the posterior chamber; but the delicacy of the operation, and the amount of experience and mechanical tact required to perform it well has induced many operators to resort to displacement, which is much more simple, and, in inexperienced hands, the safest operation. I believe that when extraction is skilfully performed the patient has a much better chance of recovering and retaining his sight than after depression. Mr. Hamilton, of Edinburgh, from information derived during a tour of observation through Germany, says,—"It is regarded almost as an axiom at the Vienna school, that if the case be well selected, and the operation be adroitly performed, extraction is, beyond all comparison, the most satisfactory procedure for all concerned. At the same time it is maintained that it requires considerable skill and practice, so that when individuals are so placed that they have not every advantage, they are then prone to look about for arguments against it, and for reasons why other methods should be preferred, which, in reality, amounts to the admission that extraction is too difficult for them. Hence the rarity of good extractors, and these being almost confined to capitals and other large cities, and to few even in them; hence so many preferring other operations—seldom or never having recourse to this one; hence, also, the many objections brought against this operation, which those who are skilful in its performance know nothing about, finding it truly successful and free from injurious consequences." Mr. Mackenzie adds:—"That extraction is the proper mode of removing a hard cataract is an assertion of the truth of which those who have had any considerable experience in the treatment of eye-diseases appear to be as firmly convinced of as they are that soft cataract may safely and satisfactorily be cured by division." According to my experience, extraction is generally followed by more immediate inflammation than occurs after the operation of depression, but it can usually be controlled by rapid depletion, and after it has subsided the patient is less liable to subsequent subacute posterior internal inflammation, often permanently injuring vision. I have occasionally extracted in one eye and displaced in the other, and in such instances the former operation has generally given the most permanent and satisfactory vision. Disorganizing inflammation following displacement is attended by excruciatingly severe pain, resulting from an increased secretion of aqueous humor, the formation of pus, or an effusion of lymph in the interior of the eye, distending its unyielding coats. In one instance I found it necessary to open the cornea to relieve the internal pressure. Inflammation following extraction is much less painful, as the opening in the cornea allows the escape of the redundant fluids, relieving the eye from the pain of excessive distension. In a prominent eye I prefer making the superior section of the cornea, which can be done with equal facility as the inferior; the constant pressure of the upper lid, and its levator muscle, has a tendency to keep the cut surfaces in contact, thus favoring union by the first intention. If the inferior section is made, and the wound does not speedily unite, in opening the eye the lower lid is apt to become entangled in the wound, and interfere with union; in such cases there is swelling of the conjunctiva at the edge of the cornea, which, in moving the eye, is irritated by frequent contact with the margin of the lower lid. When a skilful assistant is not at hand, rather than trust to an awkward or inexperienced one, I prefer to operate without assistance, holding the lid and steadying the eye with the fingers of one hand and using the knife or needle with the other, alternating the hands according as the right or left eye is to be operated on. If, however, the eye is deep-seated in the orbit, the brow projecting, the opening of the lids small, and the orbicularis palpebrarum active, an assistant cannot well be dispensed with in making the incision in the cornea; indeed, in such cases it is scarcely advisable to attempt extraction.

Treatment of secondary capsular cataract.—This affection is common after the removal of the lens. I have had it occur after my own operations, and have frequently met with it in cases operated on by others. Fragments of capsule retaining an attachment, so that the circulation can be kept up, are never absorbed, but inflame, become thickened and opaque, and the free edges float in the pupil and obstruct vision. I formerly attempted to remove this membrane by means of a needle introduced through the sclerotica, but generally without success; as it is very firm and tough, and, floating in the aqueous humor, it yields before the needle, so that it is impossible to penetrate or entangle the point in such a manner as to tear the capsule from its attachment; and if carried into the vitreous humor out of the axis of vision, on the withdrawal of the instrument it floats back into the pupil again, and the patient is not benefited by the effort. The most effectual way of restoring vision in such cases is to open the cornea at its temporal margin, introduce a pair of delicate forceps, seize the membrane and withdraw it from the eye. The canula-forceps, recently invented by M. Charrière, are admirably adapted to the removal of secondary capsular cataract, requiring but a slight corneal opening to give access to the opaque membrane. Occasionally we find the capsule adherent to the posterior surface of the iris. The following case came under my charge in the spring of 1854:—A negro woman had been operated on for cataract some years previously, in Charleston, S.C. When I saw her the right eye was staphylomatous; the pupil of the left was entirely covered with a dense, firm, white membrane, attached to the uvea, so that the iris was motionless and the pupil rather contracted. She had some perception of light, and could tell the situation of the windows, and distinguish the shade of the hand passed before the eye, when exposed to a strong light. In the presence of the late Professor Wooton, and Drs. Harris and Smith, I opened the cornea at its temporal margin, and with a straight cataract-needle, its point delicately held against the centre of the thickened capsule, I drilled a hole through it by rotating the instrument between the thumb and finger. I then bent the point of an iris-hook at right angles, introduced it through the central opening, and entangled the point in the posterior part of the membrane, near the pupillary margin, and by gentle manipulation succeeded in detaching it from the iris at its superior and nasal edge. I then withdrew it through the corneal opening until that part of the iris retaining an attachment was everted, when I dissected it loose with a delicate knife, and removed it entirely from the eye. The iris was not wounded, and immediately returned to its natural position, leaving a perfectly clear, black, but motionless pupil. The incision in the cornea healed in forty-eight hours, without pain, and scarcely perceptible conjunctival redness. Vision was improved so as to enable the woman to find her way about, but not sufficient to see small objects distinctly.

In double cataract ought both eyes to be operated on at the same time?—As a general rule, I think it best to perform a double operation, and I see no reason to depart from this procedure, if extraction is deemed to be the preferable operation; but if the lens removed is found to be hard at its centre, with soft periphery, I prefer to use the needle on the second eye, lacerate the capsule, and allow the soft part to be dissolved, and extract the nucleus at a subsequent time through a small section of the cornea; indeed I consider this mode of operating the best, whenever this state of the lens is previously known to exist; and if any part of the capsule remains in the pupil, it can be removed with the hard nucleus. I have noticed that patients with double cataract, after one eye has been operated on, have great dread of an operation on the other, even if the restoration of the first eye was complete, and attended with but little pain. If the attempt on the first eye fail from suppurative inflammation, or other cause, and is attended with severe pain, patients often refuse to submit to a second operation, believing it would be unavailing, subject them to unnecessary suffering, and, perhaps, deprive them of even the perception of light. Cataract patients generally come from a considerable distance, are not unfrequently in indigent circumstances, and consequently find it inconvenient to return at a subsequent period for a second operation. In nearly every variety of ophthalmia, when both eyes are affected, one is always worse than the other—alternating, perhaps, the acute symptoms yielding in one while they increase in the other; and I have noticed the same alternation of acute inflammation in the two eyes that had been operated on for cataract at the same time, one inflaming severely, while the other is scarcely sore at all. In May last I performed a double operation on an old man for soft lenticular cataracts with small hard central nuclei. I lacerated the capsules, broke up the lenses, and displaced the central portions at one sitting. The right eye inflamed considerably, was painful, red, and tender to the touch, and could not bear the light. The left one did not inflame at all, and gave him no uneasiness whatever, until at the end of three weeks, when, during one night the pain and tenderness suddenly changed to the left eye, and the right became apparently well. The acute symptoms soon yielded; a portion of opaque capsule remaining in the pupil of the left eye, I removed it through an opening in the cornea, and the patient went home two weeks after the last operation, able to read small print with the assistance of magnifiers.

It is not unfrequently the case that the first operation succeeds, and one performed at a subsequent time on the other eye fails, and *vice versa;* and sometimes both eyes are lost when operated on at different periods. That these results occur more frequently after a double operation, I very much doubt. Statistics from the records of surgeons of large experience would be very useful on this point, and would definitely settle the question. Dr. Sloan, house-surgeon to the Leicester Infirmary, has recently published the result of two cases of double extraction, and adds:—"I attach great value to any statement of Mackenzie's regarding ophthalmic surgery; but I believe, and I hope to be able to prove to you, that his opinions concerning double extraction are erroneous. Every one who has seen many cases of diseases of the eyes, must be aware of the great sympathy that exists between them; and I was taught to consider the extraction of both lenses at one sitting a most hazardous proceeding, inasmuch as if inflammation came on in one eye, the other would most probably become affected by sympathy, and that it was therefore advisable to allow some months to elapse between each operation. * * * * I learned from Mr. Paget that his father, whom he succeeded in the office of surgeon to the Infirmary, always performed double extraction; that he himself has always followed the same plan; and their combined experience extends over a period of sixty years. I have been told that his late colleague, Mr. Nedham, did, and I know that his present colleagues, Messrs. Macaulay and Beufield, do extract cataractous lenses by the double operation. These gentlemen are convinced that the greater risk of inflammation after double extraction is a myth—a plausible hypothesis not founded on facts; and the truth of which, I believe, has not been previously questioned in this country." The remarks of Dr. Sloan are not only sensible, but the views he so ably advocates have stood the test of experience.

ART. II.—*Convulsions: their Pathology and Treatment. Founded mainly upon the teachings of the late Dr. Marshall Hall.* By B. M. WIBLE, M.D., of Louisville, Ky.

THE frequency and fatality of convulsive affections, especially among children, render the subject an exceedingly interesting one to practitioners of medicine. Besides the accurate reports made in other countries, those derived weekly from some of our larger cities show how frequent and how fatal are the diseases of this character; and there are few physicians, I am sure, who have not seen enough to be impressed with their importance.

It appears to me that the pathology and treatment of this class of diseases, as taught in our standard books, have not been presented in a manner to accord with the present state of physiological and pathological science; and the object of this paper is to controvert some of the views held, and to present those which I think to be true. A leading error, which pervades almost all the dissertations I find upon the subject, consists in regarding convulsions as dependent, necessarily, upon a morbid condition of the brain. This idea has become so thoroughly interwoven with the views commonly entertained, that all the demonstrative teachings concerning the offices performed by the various parts of the nervous system have not been sufficient to dispel it from the minds of our most modern and able medical writers. Dr. West, without clearly defining the nervous centres involved in the convulsive phenomena, leads the reader to look upon the brain as the part chiefly at fault. He thinks congestion of this organ is generally a primary condition, and in some cases, when this view is out of the question, he substitutes for the congestion *cerebral irritation.* But it is difficult to define what are Dr. West's views of the pathology of convulsions as expressed in his *Lectures upon the Diseases of Children.* Dr.

Wood, in his treatise upon the *Practice of Medicine*, holds similar views, and they are equally indefinite. In the *Cyclopædia of Practical Medicine*, Dr. Crawford and Dr. Locock hold to the leading error of the primary involvement of the brain, but it is candidly acknowledged by them that the essential condition of the nervous system in the disease is not understood. Dr. Cullen advanced the doctrine that convulsions were always the result of irritation of the brain, and this great error still holds dominion over the medical mind.

In examining the various authorities it is seen how truly convulsions have been traced to their causes; but in the absence of a solution of their mode of action, the treatment has been necessarily empirical, and sometimes hurtful. That the nervous system is involved in the convulsive phenomenon is susceptible of the clearest proof. If the nerves be divided supplying one of the extremities of an animal, in which artificial convulsions have been excited by strychnine, it will be found that the extremity thus deprived will not participate with the rest of the body in the convulsive action; and it is clear, from this fact alone, that it is necessary that the nerves should possess an unbroken connection with the muscles. I am not aware, however, that it has been controverted that the muscular activity witnessed in convulsions is called forth by the nerves in connection with their centres; but the question is, What are the nervous centres involved? If a frog or any cold-blooded animal, or a very young warm-blooded animal, as a kitten or puppy, be brought under the influence of strychnine, the slightest excitation of any part of the surface will produce convulsive action; and if the brain be now removed, excitation will be followed by the same effect. If the viscera of the thorax and abdomen be removed, and with them the ganglionic system of nerves, leaving only the spinal centres in connection by their nerves, with the muscles, excitation will still develop the muscular contractions; but if the medulla spinalis, with the medulla oblongata, be at any time destroyed, then excitation fails to induce muscular action. On the other hand, by way of cross experiment, the brain may be sliced away,—that is, the cerebral and cerebellar lobes, the corpora striata, and the thalami optici,—without exciting any convulsive movements, and nothing of the kind is produced until the region of the medulla oblongata is invaded. It may be stated, in addition, that children have been born without brains, and have died convulsed. The conclusion seems inevitable from these facts, that the nervous centres which supply the force which calls the muscles into action in convulsions, are the medulla spinalis and medulla oblongata, and not the brain, as is too generally supposed; and this is the conclusion adopted by physiologists, but not by writers generally upon practical medicine, or at most the latter have not employed it when treating upon convulsions.

Assuming, then, the spinal system to be the source of the nerve-force which calls the muscles into action in convulsions, I will now inquire as to the peculiarities of this force.

One of the peculiarities of the nerve-force of the spinal system is, that to develop it requires *excitation;* and it was on this account that Dr. Marshall Hall applied to it the term "*excito motor.*" That eminent man maintained that the brain may manifest its force *spontaneously,* while that of the spinal system is only called forth by some *excitation.* Thus, if a snake be divided halfway between the head and the tail, it will be found that the part with the head will move spontaneously—that is, it will avoid its enemy, and seek to escape—while the other part will show no evidence of intelligence or of spontaneous movements; but it will move actively if touched or excited; and it is found that if this part be placed upon some soft substance and so covered as to be free from excitation from surrounding objects, it will never move; it displays, then, muscular activity in no other way but in obedience to excitation. If merely the head of the animal be separated, the remaining part shows the same peculiarity. The conclusion, then, is that the spinal system calls the muscles into activity only when it has been subject to excitation.

Another peculiarity of this force is, that it is capable of augmentation and of diminution. Its augmentation is produced by muscular inactivity or quiescence, and is found in persons of sedentary habits, and in some animals after hybernation; also by the prolonged excitation or irritation of the extremities of the nerves, such as arises from primary dentition, from decayed teeth—producing disease of the gums—from worms in the alimentary canal, from prolonged indigestion, from disease of the neck of the uterus, and, indeed, from morbid action in any part of the body freely supplied with incident spinal nerves. Traumatic tetanus furnishes a marked example of the wonderful augmentation of the nerve-force. It is produced also by certain medicinal or poisonous agents, as strychnine, opium, and other substances; and by a morbid state of the blood as is found in many diseases. Diminution of the nerve-force is produced by prolonged muscular effort, by shock from great injuries, by over-stimulation, by certain diseases termed adynamic, by chloroform, and perhaps by some of the narcotic substances.

In connection with these considerations it may be well to remark, that the spinal nerve-force is in a degree antagonized by volition. In infancy and childhood the volition is feeble, while the spinal functions are strongly performed; and, to some extent, it is on this account that convulsive diseases are so much more frequent at that period of life.

Having presented these peculiarities of the nerve-force, as far as my limits will allow, I will now proceed to state the manner by which it is impressed in convulsions.

1st. By irritating agents making an impression on the elements of the nerves, the impression being sent along the nerves to the spinal centres and thence reflected to the muscles.

2d. By irritating agents, such as foreign substances, making an impression directly on the centres; inflammation, or its effects; and poisons, or morbid materials circulating in the blood exciting the centres directly; and

3d. By mental emotions, which are known to act on the spinal centres, causing them to send out motor impulses.

The causes of convulsions may be classified according to the three modes by which the nerve-force is capable of being excited into activity.

The causes which act upon the extremities of the nerves are almost innumerable, and I shall allude only to a few of the more prominent of them.

Besides the accidents to which a child is subject during the process of parturition, the exposure of it to the external world—to a temperature colder than that to which it has been accustomed, to substances harder than those with which it has been in previous contact, the new processes by which its nutrition is supplied, and by which its blood is oxidized, the peculiar delicacy of its organization, with a nervous system highly susceptible to impressions—renders the period of early life one of much liability to convulsive diseases.

At any age the most frequent causes are those which make their impression upon the organs of digestion. These are primary dentition; decayed teeth, attended with inflammation of the gums; an overloaded stomach; irritating and indigestible substances in the stomach; acidity of the stomach and bowels; indigested food which has passed into the colon and rectum; irritating secretions lodged in these parts; and worms in the stomach and large intestines.

It is well known that when convulsions arise from intestinal irritation the cause is in the stomach, or in the large intestines, and this corresponds with the anatomical fact that these parts are largely supplied with spinal nerves, of which the small intestines receive few or none.

While the alimentary organs are, perhaps, most frequently the seat of the excitation which gives rise to convulsions, it must be borne in mind that these may be produced by excitation of any part of the body supplied with spinal incident nerves; as the meninges of the brain, the skin, the respiratory surfaces, the kidneys, uterus bladder and urethra, and the vagina, uterus and ovaries.

The causes which act centrically in producing convulsions are numerous. A prominent one is that of effusion within the cranium. The effused fluids effect compression of the medulla oblongata, and in this way excite convulsions. That convulsions are thus excited I think is fully proved by an experiment made by Mr. Lawrence upon a living child which was born with none of the bones of the cranium present except the sphenoid, and none of the encephalic nervous structures except the medulla oblongata. He was enabled to excite convulsions in the child by slight pressure upon the exposed medulla oblongata. Abercrombie relates a case of a child eight months old, in which, at an early period of its complaint, "there was observed a remarkable prominence of the anterior fontanelle," which increased to a circumscribed tumor, soft and fluctuating,—and pressure upon it occasioned convulsions.

Besides the causes which act mechanically on the nervous centres, various substances circulating in the blood may excite them and produce convulsions. In this way poisonous agents, absorbed into the circulation, produce their influence on the nervous system. The convulsions which so often occur during the eruptive fevers, as smallpox, scarlatina, and measles, and those which arise in the course of many other diseases, are no doubt owing to some material circulating in the blood and irritating the nervous centres.

The suppression of the urine, or the arrest of any habitual discharge, is apt to be followed, it is well known, by convulsions.

As a cause of convulsions the *emotions* must not be overlooked. The seat of the emotions is undoubtedly in the brain; but they manifest their influence on the muscles independently of the will. The mode in which they are supposed to act is by an influence transmitted from the brain to the spinal centres; thence a motor influence is propagated to the muscles. Muscular contractions are observed to take place under the influence of any of the strong emotions; and in excitable persons, especially children, they often amount to convulsions. The liability of the emotions to excite convulsions will greatly depend upon the previous excitability of the nervous system. They are more liable to have this effect when they coexist with any of the peripheral irritations, as that of dentition or gastro-intestinal disturbances; and it is plainly to be observed how startings at such times are produced by the emotions.

The premonitory symptoms of a convulsive attack are to be found in the irregular actions of the motor apparatus in various parts of the body—as sudden startings, fixation or oscillation of the eyes, alternate contraction and dilatation of the iris, the varied expression given by the muscles of the face, and the peculiar contractions of the hands and feet. When the convulsion has commenced, the muscles of all parts of the body are, in some cases, involved; in others, only partially. The muscles of the neck are found rigid and jerking, twisting the head around upon the shoulder, and arresting the return of venous blood from the head. The respiration previously irregular and sighing, is, during the attack, often suspended for a considerable time. The suspension of the breathing depends upon the fixation of the muscles of respiration and upon spasm of the glottis.

That I may not be misunderstood, I will make a brief statement as to the extent to which the *brain* is involved in the disease.

Convulsions may arise from inflammation of the meninges of the brain, or from spiculæ of bone pressing upon them, and thus exciting the terminal extremities of the nerves distributed to them. In these instances the convulsions are excited by eccentric, and not centric excitation, as is sometimes stated. The inflammation may, however, extend to the medulla oblongata, and produce direct or centric excitation; or, it may terminate in effusion, and effect counter-pressure. The convulsions which occur toward the fatal termination of meningitis are generally the result of effusion. It is possible that great cerebral congestion, without effusion, may produce counter-pressure sufficient to excite convulsions, but this is hardly probable.

On the other hand the brain may be involved as an *effect* of the convulsions; the fixation of the muscles of respiration, and the spasmodic contractions of the muscles of the neck, retard the venous blood returning from the head, and produce passive congestion of the encephalon. This passive congestion may in turn, by counter-pressure, add to the severity of the paroxysm; and it is, moreover, the cause of the insensibility, coma, stupor, and mental aberration which accompany and succeed the convulsion.

While the brain, then, is sometimes, but not necessarily involved, it must be borne in mind that the centres essentially concerned are those of the excito-motory system.

The prognosis of an attack of convulsions may generally be regarded as favorable if the cause can be promptly removed; but death may result from embarrassment of the respiration—particularly from spasm of the glottis—in cases otherwise favorable. When the cause is some irritating substance in the stomach or large intestines, it may be promptly removed by an emetic, or by injections into the lower bowels, and in such cases a favorable termination may be expected. When they come on in the course of an eruptive fever, the development of the eruption generally terminates the convulsion. On the contrary, when they arise from effusion within the cranium, or from any persistent cause, the prognosis is unfavorable.

Treatment.—If the nature of convulsions is understood—that is, the *laws of action* of the nervous system, and the *causes* that affect it—the true plan of treatment can be readily deduced. Two leading indications are to be observed. The first is to remove the cause, and the second is to overcome the preternatural excitability of the excito-motory or spinal nervous system. If the cause be effusion within the cranium, the result of inflammation of the brain or its envelopes, but little can be anticipated from any plan of treatment that can be adopted. The remedies for cerebral inflammation, and those that promote the absorption of effused fluids, are the only ones that can be employed, except such as tend to allay the excitability of the nervous system. If the cause be either active or passive congestion of the brain, the moderate abstraction of blood, the elevation of the head and shoulders, continued cold applications to the scalp, the removal of every cause of eccentric irritation, and the avoidance of the emotions, together with such means as will be hereafter alluded to as calculated to reduce augmented excitability, will constitute the resources to be employed in the treatment. If the case be one of the eruptive diseases, efforts ought to be made to promote the appearance of the eruption by the use of gentle stimulants, the employment of diluents, and such other means as conduce to effect that object. If the cause be the suspension of any of the secretions, or the stoppage of any habitual discharge, their restoration ought to be aimed at. If strychnia, opium, or any deleterious agent of the kind have been taken into the system, its ejection should be effected as far as possible, and such antidotes given as tend to overcome the effects of the poison. In cases where the cause is some unfriendly material circulating in the blood, there is no direct or prompt way to get rid of it; then, besides the use of remedies which aid in its elimination, those calculated to soothe the too excitable nervous system should be resorted to, and those which excite it avoided.

The convulsions most frequently seen in practice are such as arise from unfriendly substances in the stomach, or in the large intestines; and the treatment of cases of this character is the most satisfactory. To remove the cause is the prime object. When indigestible food, or other irritating agents in the stomach, give rise to convulsions, prompt emetics, as of sulphate of zinc, or of ipecacuanha, should be directed. If the fluids of the stomach are acid, the bicarbonate of potassa may be advantageously given with the emetic. After the emetic has acted, some mild alkaline drink ought to be administered, to correct the acidity which is apt to follow the irritation of the stomach. When the convulsions arise from irritating accumulations in the large intestines, I know of no remedy which so readily relieves as the free injection of warm water into the bowels. This treatment I have pursued for several years, and it has been most satisfactory. Recently, an article appeared in the *London Lancet*, commending in the highest terms this simple treatment; and the explanation given of its efficacy was that the warm water distended and soothed the irritated bowel, prevented it from contracting upon its irritating contents, and promoted the expulsion of them. Certainly this treatment is more efficacious and rational than the one generally advised, of giving stimulating injections to produce a revulsive effect.

When convulsions are produced by irritants, or morbid action in any other part of the body supplied with incident nerves, as the gums, the urinary organs, or the uterus and vagina, the plan of treatment should consist in removing the cause by such means as are suggested by therapeutical principles. Frequently several causes are found to exist; thus, there may be a swollen state of the gums, while the digestive organs are loaded with irritating matter. In such cases the gums should be divided, and the digestive organs freed from whatever is irritating them.

The second indication—viz. the reduction of the augmented excitability of the nervous system—constitutes an important part of the treatment of convulsions. In the first place, besides removing the various causes which give rise to the excitable condition, the contravening of the various sources of excitation to the nervous system, and the avoidance of mental emotions, constitute an important part of the treatment.

In treating convulsions it is not always that the cause which gave rise to them can be at once removed; and while this is being attended to the warm water will have an excellent effect in quieting and soothing the prostrated nervous system; indeed it is the most effectual remedy to control excitability. It should be at the temperature of from 100° to 110°. It is probably the high temperature that controls the excitability, if some recent experiments made, I believe, by Edward, can be relied on.

When the patient is placed in the bath, the temperature should not be so high, otherwise the first contact with the bath will excite. After the patient is placed in the bath, at a temperature which neither gives a disagreeable sense of heat or cold, then hot water should be gradually added to attain the requisite temperature. After the patient is removed from the bath, friction to dry the surface must be prohibited. It is best to cover the patient comfortably in a bed, without attempting to dry the surface, as the friction necessary to accomplish this might continue or excite the convulsion. Baths of this kind ought to be repeated from time to time, as often as any threatenings remain of a return of the paroxysm. After the stomach and bowels have been freely evacuated, and after active cerebral congestion has been overcome by blood-letting, hyoscyamus has a decided effect in lessening the nervous excitability. Perhaps other articles, usually called antispasmodics, would have the same effect; but upon none of them do I place so much reliance as upon the hyoscyamus.

The loss of blood is always injurious. It increases the excitability, and in consequence of which, in any case, the loss should be moderate.

It will be inferred, from what I have stated, that all rude medication, as mustard-plasters, frictions of the skin, and irritating purgatives are positively injurious: they are advised, however, by our standard writers.

After a convulsive seizure has passed, it is the duty of the physician to prescribe such a course of medication and regimen as will obviate the liability to its return. For this purpose a regulated diet, attention to the digestive organs, cold bathing, free exercise in the open air, and such other means as will give vigor to the system, should be enjoined. In directing prophylactic or curative means, it must be borne in mind that the disease is one in which the nervous system is *excited* to action; therefore, all agents which would have that effect must be avoided.

In the imperfect outline which I have here attempted to draw of convulsions, the principles presented apply to the entire class of convulsive and spasmodic affections—as puerperal convulsions, epilepsy, apoplexy, chorea, etc. They apply also to many of the cases of functional and sympathetic derangements of the organs of the body. Convulsions are essentially related to the spinal nervous system—a system that holds extensive relations in the animal economy, and plays an important part in almost every disease.

ART. III.—*Adaptation of the Clamp and Button Sutures to Prolapse of the Vagina.* By HORATIO R. STORER, M.D., of Boston.

CASE I.—Mrs. W——, a servant of Dr. Morland, was placed under my charge by that gentleman in the summer of 1856.

June 3d. Patient a widow, aged forty-two, general health tolerably good, though suffers somewhat from dyspepsia. Has for a long time noticed pain in right shoulder and left iliac region, which last has always been more or less tender on pressure. Ceased menstruating, she is confident, thirteen years since, at which time, if her age as given is correct, she could have been but twenty-nine. Has seen no colored discharge since. Has had, till of late, but little leucorrhœa. Has had but one child, a son, some twenty years ago; easy labor, but rapid, especially toward its close. Has never miscarried.

Thinks her bowels are freely moved daily. Urine passed with great difficulty, but little in the twenty-four hours, though constant sense of distended bladder. Has noticed this symptom gradually increasing, till for past three months has found it unbearable. A great sense of fullness and distention in vagina, which at its mouth is blocked by a projecting mass. This by its size and sensitiveness seriously impedes walking, and at other times often causes severe pain, particularly when rising up and sitting down. Some pain in back, and sensation of dragging in loins. Is confident she has prolapsus uteri. Has never allowed an examination by a physician.

Chest auscultated and percussed; its organs healthy.

Upon examination, abdomen of ordinary size and fullness; no tenderness on pressure except over left ovary, as she had stated. Vagina found completely filled by a large and fluctuating tumor, at once increased by coughing or forcing down, or by rising to the feet; behind this the finger passed readily, uterus being perfectly in place. Vaginal gape large, perineum almost entirely effaced. Rectum, supposed by her empty, was found by the finger in vagina crammed with hardened fæces so as closely to simulate carcinoma, till firm pressure produced their characteristic œdematous feel. The free action of an enema, which was attended by vomiting and syncope, made the diagnosis more certain, and a catheter easily emptied the prolapsed and distended bladder. A little fleshy protuberance, size of a bean, behind meatus and on urethra, but external to it; this would have seemed like an urethral pouch from dilatation, could the catheter have been made to enter it. The patient entered the Lying-in Hospital on June 8th, and was then seen by my colleagues, Drs. Read and Dupee. To the fleshy tubercle above described, which she had often inspected and been greatly troubled by in mind, I applied a ligature, on June 17th, with the assistance of Dr. Read; it was once subsequently tightened, and came away on the seventh day. From the time of her entrance a doubly-curved catheter with a flexible tube attached was retained in the bladder, and plugs of lint soaked in a saturated solution of tannin, as advised by Dr. Fordyce Barker of New York, for prolapsed uterus, were kept in the vagina night and day. She was put on simple tonics with house diet, and rapidly improved in spirits, the displacement daily diminishing in extent. She was at all times disposed to despond, frequently had her sleep broken by incubus, and on June 12th she got a slight attack of diarrhœa, but this was easily checked.

On the 25th of June she was discharged much improved.

Re-entered the hospital on July 26th.

Has continued tonics till present time. General health better. Has found much relief from the absence of the mass removed by ligature, but complains that the fullness at vulva, dysuria, and difficulty in walking have returned. Upon examination bladder found again down. Will not allow pessary, whether of India-rubber, pig's bladder, or aught else. Is satisfied that all other means are but palliative, and begs if any operation can give chance of relief that it may be performed.

The procedure recommended and practiced with such success by Mr. Brown of London was, therefore, decided on, with certain modifications suggested to me a short time previously by my friend Dr. Marion Sims of New York.

July 27th. Low diet. Pill of oxgall, grs. x., to-night and to-morrow night.

July 29th. Bowels cleared by an enema in forenoon. Proceeded to operate at 4 P.M. with the assistance of Dr. Read, the patient having been etherized. Strips of mucous membrane, an inch in length by half an inch in breadth, were first pared away on each side just within and parallel to the nymphæ, their edges being brought together by two linen stitches. Then beginning just posteriorly to the lower margin of these patches, the membrane was freely dissected up and removed, in shape of a horse-shoe, and entirely around the posterior fourchette to the depth of nearly an inch within vagina. This having been done, ligatures of silver wire, three in number, were introduced, secured upon perforated German-silver quills, and clamped tightly by shot.

Very little blood was lost, and the patient slept quietly through the operation.

Sims' catheter having been introduced and patient put upon her side, sol. morphiæ, gtt. xx., were administered, morphiæ sulphat., gr. $\frac{1}{2}$, introduced as suppository, and a wet compress applied to the wound.

10 P.M. Comfortable.

July 30th. Slept but little last night; disturbed by restless infant in next room, and besides made effort to keep awake lest she should disturb ligatures. No pain; pulse not raised; no tenderness of abdomen. Thighs to be kept together by napkin round knees and ankles, unless patient complains. Ice to be freely given, opiates and suppository as required, and dressing continued to the wound. Thin gruel sparingly.

July 31st. Comfortable night. Complains at times of flatulence; this relieved by opiate and carminative. Urine profuse; skin cool; very little heat about pudenda; pulse quiet. In evening slight nausea.

August 1st. Complains greatly of flatulence. Abdomen hardly enlarged. Violent retching at times, with expulsive efforts to empty rectum; these not controlled by suppository. Repeat carminative, apply sinapism, and subsequently poppy fomentations to abdomen.

At 3 P.M., distress increasing, passed hollow bougie into rectum, with escape of much fetid gas, and instant relief.

At 7 P.M., complaining of general soreness of limbs; removed to softer mattress, and at 10 P.M. felt perfectly at ease.

August 2d. Slept quietly till 3.30 A.M., when had profuse watery and horribly offensive fæcal discharge, attended with escape of but little free flatus, and no pain. Complains of still further desire, so passed bougie and drew off much more fluid of similar character. Ordered chalk mixture with laudanum, catechu and charcoal, to be given as required. Wound healthy. Pulse quiet; as yet has never exceeded 84. No tenderness of abdomen; some faintness and hiccough.

At night dejections continuing, ordered brandy ʒi. every half-hour; and, alternating with a pill of two grains of tannin and one of opium, ʒi. of powdered charcoal in boiled milk; one of the two every hour and a half.

August 3d. Had ten dejections yesterday and five last night, offensive and containing blood. Very low throughout day, and allowed to see clergyman. Pulse, which had flagged for last twenty-four hours, begins to come up toward night. Now learn that four hours before operation, and contrary to strict orders that diet should be low, simple, and preparatory, which orders the matron had endeavored rigidly to enforce, patient got access to and devoured several mouthfuls of *lobster*, for which she had always insatiable longing.

August 4th. Diarrhœa still continues; five dejections yesterday and two last night, much the same in character, but beginning to show the charcoal and to lose their fœtor; still much blood, and at intervals flatus. Now allowed to pass water herself, but in recumbent posture. Slept most of night. At 8 A.M. transient flush from stimulants; pulse 120. At 10 A.M. pulse 110, skin quite cool, respiration hurried, much hiccough and sighing; gets but little sleep. Discontinue charcoal and substitute wine whey and wine with arrowroot, for brandy. Pills as before, every three hours. Slight but not unhealthy looking purulent discharge from wound; no heat; no fœtor.

August 5th. Patient feebler; diarrhœa continuing, five dejections during night. Was put last evening on sulphate of copper, half a grain every two hours, without apparent effect; therefore substitute for each dose three grains of subacetate of lead.

Has had for past forty-eight hours after every dejection the ordinary starch and laudanum enema, instead of which now gets one containing a scruple and a half of tannin; this given every half hour if not retained.

The matron of the hospital had also now been suffering for two days with dysenteric symptoms, bloody stools, tenesmus, &c., the effect of close attendance upon this patient; treated by Dr. Read.

9 P.M. From twelve to fifteen dejections during day, many of them involuntary, their odor less fetid; some tenesmus. Injections last ordered not retained; their strength to be doubled. Some little tendency to delirium this evening, and subsultus tendinum. Pulse for last thirty-six hours about 120. Great despondency.

August 6th. Weaker. Discharges involuntary, seven last night. Injections not retained; add to each, cupri. sulph. grs. iss. All medicine by mouth to be discontinued, and beef-tea freely given.

Enema retained from 9.30 to 1.30; after this discharges returning as before. Beef-tea greatly relished, though tongue quite dry. Resume last pills at night.

Aug. 8th. Yesterday and to-day much as before; discharges frequent, and with much blood and mucus. Pulse 106.

Aug. 9th. No discharge from 11.30 A.M. to 4.30 P.M. Disposed to sleep, and stupid; opium diminished by one-half.

Aug. 10th. Two discharges last night, more fæcal in character. Weather the past week very adverse; wet, cold, and lowering.

Aug. 11th. Pulse down to 100; brighter. Sutures removed to-day. Small and sharply marked slough under right quill, wound itself seeming to have nearly healed; dressed with diluted liq. sodæ chlorinat. In passing suppository yesterday, rectum carefully examined and found unaffected. No dejection from 11 yesterday morning till 10 to-night.

Aug. 12th. Two dejections during night, in color, consistence, and odor more fæcal; none to-day. Evidently failing, though rallies at times. Discontinue all medicine and give stimulants with care.

Aug. 13th. Very low at 7 A.M. Rallied at 9, and then nearly as for past three days. Has had no rigor since operation. At 4.30 P.M. the sphincters were relaxed, urine and fæces were profusely passed, and at 6 she died.

A woman having just been confined in next room, and there being no dead-house attached to the hospital, an autopsy was not made.

The patient was seen during her sickness by Drs. Read, Dupee, and Storer, Sen., in consultation; by Dr. Morland and by Dr. Oliver.

CASE II.—Mrs. Mary C., aged thirty-five, was delivered on Dec. 5th, 1856, by a midwife, who used much violence toward the close of the labor, the pains being very slight. Child a boy, of moderate size. The patient had previously been confined but once, ten years previously, of a girl, and had never miscarried.

I saw her for the first time on Dec. 23d, eighteen days subsequent to her confinement. At that time a laceration of the perineum was found, extending completely to the sphincter ani, and a little beyond it on one side; its edges much swollen, sore, and excessively sensitive to the touch. Suppuration profuse. Much flatus passed during the examination. Urine under control. Profuse diarrhœa. Nursing, though but little milk.

On Feb. 4th, 1857, a careful examination was again made. No restoration of the perineum had taken place, the edges of the wound were much enlarged, protruding like hemorrhoids, and the patient was complaining of great bearing down and discomfort.

Objection being made by her to the necessary operation, a perineal bandage was advised and worn for the ensuing four months, with but partial relief. By this time the protrusion of the vaginal walls had so increased, both laterally and posteriorly, that the patient returned to me at the Eustis Street Dispensary, to request a radical cure. This was accordingly attempted on June 8th, with the assistance of Dr. Hayward of Roxbury.

Operation at 3 P.M., patient having been prepared by a several days' course of ox-gall. She was etherized, put on her back as for lithotomy, the dissections made as in the former case, save that those anteriorly were omitted as here unnecessary, and the silver wires were passed. Instead, however, of being fastened to metal quills, their ends were passed through a leaden shield, as recommended by Bozeman, of Alabama, for vesico-vaginal fistula, and were tightly clamped upon it by shot. This shield or "button" was an inch and a half in length by a half-inch in breadth, and was oval in form. The treatment immediately subsequent to the operation was as in the former case, with the addition of confining the legs in a more immoveable position, by attaching the heels to a belt around the waist. Water dressings were alone applied.

No unpleasant symptom intervened, and on the 14th, six days after operation, the button was removed. Union firm and complete. No suppuration from beside wires. On the next and following day, the wires were removed. On the 16th, a profuse and painful dejection, without at all disturbing the integrity of the adhesions.

June 17th. Felt so well that she has been up to-day, contrary to orders, and has used active exertion. Last night loosed the guards from her knees, and waking up in fright suddenly spread her thighs apart, causing, however, but a slight notch at the anterior edge of cicatrix.

June 22d. Parts firm and tough; union to full depth of wound; perineum of normal extent. Patient finds bearing down gone, and expresses herself to be as comfortable when on feet as before accident.

For some time subsequently, micturition continued frequent and painful, especially after over-fatigue; but this yielded in great measure to simple treatment. Oct. 10th, four months after operation, on examination for the ordinary irritable tumor of the meatus, the perineum was found still perfect. The local discomfort was gone; the patient was cured.

Case I., though fatal, furnished rather ground in favor of than against the operation performed. It was matter of no little regret to me at the time that *post-mortem* dissection seemed unjustifiable, especially as I had been strongly dissuaded from operating by a friend who had just refused the attempt to a patient of his own; but so far as could be judged by the condition of the wound, from the outset to the very end, the absence of local symptoms, the extent to which adhesion seemed to have taken place, the apparently insufficient cause from this source for the dysentery, the apparently more than sufficient cause for it from another, there seems reason to believe that had the patient obeyed orders, she would not only have lived, but been cured.

The case is published on the ground so seldom heeded, that where successful cases have been reported, the surgeon is bound to withhold no failure, especially when attended by death.

Case II., on the other hand, was successful from the outset; and this, too, though under apparently less favorable circumstances than the other. Of a naturally much more irritable, impatient, and restless temperament, nursing throughout her confinement to bed, over-anxious about the child and the success of the operation, this patient seemed much more likely to go wrong.

In neither case was that course taken—entire division of the sphincter ani—so strongly insisted on by Mr. Brown as all important to success. I believe that with the old quill suture it is an unnecessary, unscientific, and cruel complication, and that with the modifications of suture here adopted it becomes unjustifiable. With Mr. Brown's other suggestions as to the nature and general treatment of both cystocele and rectocele, typical cases of each of which have been here presented, one cannot too fully concur.

The above cases, so far as they go, may serve to show the adaptability of the two new sutures, now so celebrated in connection with vesico-vaginal fistula, to the operation for lacerated perineum. The old quill suture, however used, whether with ligatures of hemp or silk, or the less irritating ones of silver or lead, secured by twisting, had always this disadvantage, that however closely the deeper portions of the wound were brought into contact, its upper edges would necessarily gape to a greater or less degree; an evil requiring and yet not fully overcome by the interrupted suture between the quills. The substitution in practice of Sims' clamp proved, as I had expected, to be attended with certain advantages; but these have been far excelled by the button of Bozeman, which for neatness, simplicity, completeness of action, and ease of application, I have found everything that could be desired.

ART. IV.—*Three cases of Infantile Apoplexy.* By JOSEPH H. WYTHES, M.D., of Port Carbon, Pennsylvania.

AMONG medical writers, apoplexy occurring under twenty-one years of age is said to be of such rare occurrence that I find but few cases on record. Some authors, indeed, scarcely admit its existence during infancy; yet, judging from the cases which have fallen under my own observation, I am inclined to believe it to be not so uncommon as has been supposed.

Meningeal congestion and hemorrhage are admitted to be sometimes met with at an early age, but, as Dr. Wood remarks, "It is not characterized by the usual apoplectic phenomena, and ranks, by the symptoms, rather with meningitis." Cerebral hemorrhage, on the other hand, is so rare, that Dr. Bennet doubts whether the two cases recorded by M. Lallemand and M. Billard were cases of apoplexy; and Dr. J. F. Meigs says that "Rilliet and Barthez met with only eight cases in their extensive experience, and that M. Barrier saw but one in 576 cases of disease of all kinds."

It has several times happened in the practice of the writer, to meet with cases of paralysis, more or less general, in children from two to six years old, occurring suddenly, and in no practical sense differing from the same affection following an attack of apoplexy in an adult. In the instances recorded below, death appeared to have taken place instantaneously, while the *post-mortem* examinations left no doubt but that the immediate cause of dissolution was the excessive and sudden accumulation of blood in the cerebral vessels. In the second of the following cases, dissection revealed the existence of meningitis, as well as extensive disease of the substance of the brain itself; yet the total absence of premonitory symptoms, and the suddenness and overwhelming nature of the fatal attack, have caused me to regard it as a case of apoplexy occurring in a brain already diseased, and from that cause more likely to give way.

The excessive amount of gas in the intestines in each of these cases is a symptom which may not be unsuggestive, although I am not prepared to attach any special value to it; yet it was in greater quantity than is usually observed in other examinations at a similar age.

CASE I.—On the evening of May 31st, 1852, I was called to see the child of Mr. Shaefer, about three years old, who was complaining of pain in the left ankle. It was not swollen or discolored, but the pain seemed excessive, especially on motion. The parents supposed it to have sprained its ankle while playing on the step. I ordered a stimulating liniment, and, as it had been costive, a dose of castor oil.

The next morning I was informed that the child had been found dead, lying in the bed between its parents, without awaking either. On examination I found the wrists and ankles of the child strongly contracted; the left leg, the arms, and the back considerably discolored with dark purple blood; and the left leg slightly swollen. As it was the wish of the family to have a *post-mortem* examination, I called in Dr. James Parker to assist me.

On removing the calvarium, which was done with as little violence as possible, an extravasation of blood was observed between the cranium and dura mater, perhaps half a fluid-ounce. The vessels of the membranes were much injected, and the posterior part of the septum had a large clot of blood in it. The membranes were also in many places strongly adherent. The white substance of the brain was full of bloody dots or points, with the appearance of infiltrated blood in the posterior lobes, particularly on the right side. The right ventricle had in it a clot of blood, with serum.

The viscera of the chest appeared healthy. The liver was much enlarged, and contained a few cysts. The stomach was disproportionably small. The appearance of the intestines was generally healthy, but about one-half of the ileum was distended with gas. A few tubercles were observed in the mesentery.

CASE II.—Nov. 4th, 1855, was called to see the child of S. Landis, who had died suddenly. I officiated at its birth exactly three months previously. It was a vigorous male child, and had always been in good health, with the exception of occasional attacks of colic, for which no medical attendance was deemed necessary. On Saturday night, Nov. 3d, the family retired to bed at 12 o'clock, and the child seemed as usual. At 5 or 6 o'clock in the morning the mother laid him off her arm, as she supposed, asleep. After breakfast, wondering he slept so long, she went to rouse him, and found him dead.

When I first saw him, about 10½, A.M., he was quite cold. The muscles of the hands and feet were quite contracted, but particularly so on the left side; the mouth was drawn slightly awry; and the whole posterior surface from head to foot was of a purple hue. I suspected cerebral disease, and asked for a *post-mortem* examination, which was granted. I was assisted by my brother, Dr. Wm. W. Wythes, Dr. G. Brown, and in the latter stages by Dr. J. S. Carpenter,—the last-named gentleman having arrived too late to inspect the brain.

The vessels of the arachnoid and pia mater were considerably congested, and the whole cerebral substance was softened, being about the consistence of melted butter. A little serum was observed at the base of the left hemisphere of the cerebrum, but nothing abnormal in the ventricles. The membranes of the cerebellum and medulla oblongata were strongly congested.

The lungs, heart, and abdominal viscera were quite healthy, though the latter were fully distended with gas.

CASE III.—Dec. 20th, 1855, was called to make a *post-mortem* examination of the child of J. R., aged three months, which had been found dead in its bed. Was assisted by Dr. G. Brown.

Muscles of hands and feet much contracted. Foam issuing from mouth and nose. Face purple. Purple congestion of the skin of the back and limbs, probably from gravitation.

The membranes of the brain healthy, but its substance much congested. On slicing, it seemed full of bloody dots. A small clot of blood was found in each ventricle. Lungs congested. A serous effusion observed in the pericardium. Liver large, and intestines full of gas. Stomach and bowels otherwise healthy.

ART. V.—*Congenital Hydro-Cerebral Hernia; Death; Post-mortem Examination.* By H. P. AYRES, M.D., of Fort Wayne, Indiana.

I USE the term Hydro-Cerebral Hernia for want of a better to designate the following case. Such cases may be of common occurrence, but not in my experience. The disease is different from hernia cerebri, or encephalocele, being more nearly allied to hydrocephalus externus, yet materially differing in its anatomical characters. Cases somewhat similar are on record, but their occurrence *in utero* and the results of *post-mortem* examination have been neglected.

Mrs. H., aged thirty-two, fifth pregnancy; of a good constitution. In her fourth month she found that she was more than ordinarily enlarged, and had a strangely severe pain in her left side. The extraordinary enlargement continued to increase, which ultimately rendered her almost helpless. The pain in the side became paroxysmal, was greatly increased by change of position, and sometimes insupportable.

Purgative medicines were administered with the hope of relief, but the result was only temporary. Venesection was resorted to, but with little better results than attended the administration of purgatives.

Her previous labors had been very easy, and not tedious.

Her labor in this confinement commenced at the full period of gestation. I found the labor progressing rapidly. The membranes broke soon after my arrival, and the usual amount of liquor amnii escaped. In touching, I found the head presenting, and in the course of a few minutes I felt what appeared to be another membrane. During each expulsive pain, the latter was pressed against the superior strait, but could not engage on account of its size; consequently, when the pain subsided, it would rebound. I was satisfied the membranes proper had been ruptured—that the liquor amnii had escaped—that the head had presented, but what this was, was to me a mystery. Was it a second fœtal membrane? That was impossible, for the head had surely presented. Was it a polypus? The impression made upon the finger contra-indicated such a conclusion. I felt satisfied the labor could not be accomplished, as the periphery of the presenting body forbid such an idea. I satisfied myself that fluid was contained in the sac, and hence determined to puncture it, which I did. The gush of fluid was terrible. After permitting eight or ten pints to escape, I closed the vagina, to ascertain the precise character of the fluid. Finding it to be a serous, limpid one, and that the pulse of my patient was good, I permitted he remainder to escape.

The labor was soon completed, and the difficulty became apparent.

There was an apron, or duplicature of the scalp, falling from the occipital portion of the head, and parallel with the occipital protuberance. The length of this attachment or duplicature on the head was three and a half inches, widening, as it descended, in a wedge or balloon-like sac, until it rested on the back.

On the presenting portion, or the point where the puncture was made; there was a circular space of three inches, which had the appearance of having been in close contact with the parietes of the womb, and there retained by suction, which may account for the excruciating pain felt by the mother during gestation. In every other respect the child was well formed and healthy. The next day there appeared to be a line of demarcation near the connection of the sac with the head, embracing the whole circumference of the sac, and had the appearance of sloughing. The succeeding day this line began to disappear, and a free and healthy circulation was established. The puncture closed, and the fluid began to accumulate, which evidently gave great pain to the infant. The puncture was reopened, and several ounces of a serous, limpid fluid escaped. Oleaginous and astringent dressings were applied, which greatly reduced the size of the sac. During the period of twenty-four hours, five or six ounces of fluid would accumulate, giving evident pain, which was immediately relieved when the fluid was evacuated. The child appeared entirely well, nursed heartily, looked about as infants do, and manifested all the healthy functions of the brain.

The sixteenth day it was feverish; from the seventeenth to the twentieth, it was comatose, and became greatly emaciated; on the twentieth day it died, evidently from cerebral trouble.

Post-mortem.—The sac was found to be of a uniform thickness with, and presented all the characteristics of the integuments of the head, and was formed by a duplication of the scalp. The pia mater and dura mater were continuous from the internal table of the cranium, diverged from the foramen in the occipital bone, and lined the sac throughout. The perforation or foramen in the bone was oval, one and a fourth inches transversely, one and three-fourths inches perpendicularly; the edges were rounded, smooth, and evidently a finished formation. A cone-shaped portion of the brain projected through the foramen one and a half inches, and was entirely healthy. The fluid, as I have remarked, was of a serous, limpid character, and was secreted in quantities varying from two to five ounces in twenty-four hours.

The character and locality of the foramen renders it highly probable that the hernial character of the trouble must have occurred before, or simultaneously with ossification.

ART. VI.—*Case of Fracture of the Skull and Injury of the Brain by a Circular Saw.* By ELLERSLIE WALLACE, M.D., Demonstrator of Anatomy in the Jefferson Medical College of Philadelphia.

I WAS called on the morning of the 31st of July to a little girl ten years of age, who, in stooping down under a circular saw of 14¼ inches diameter, which was revolving two thousand times per minute, received from the saw a wound of the following description:—

It passed transversely across the head, nearly coinciding with the line of the coronal suture; its length was 4⅓ inches through the scalp, and precisely the same through the bone. The width of the gap in the bone was one-sixth of an inch. The greatest depth of the wound was at its middle, in the line of the sagittal suture, at which point it extended vertically down into the cavity of the cranium, one inch and an eighth from the outer surface of the scalp.

Of course the superior longitudinal sinus was divided; whether the falx cerebri was entirely cut through or not I am not certain, but from the size and shape of the head I think it fairly possible that such was the case; in such event, the inferior longitudinal sinus, also, must of necessity have been divided.

The edges of the scalp-wound had retracted about a quarter of an inch from the margins of the cut through the bone, and the divided surfaces were as clean and smooth as if the section had been made with a sharp scalpel. As far as could be seen, there was no foreign matter in the wound, nor any granules from the bone; the great speed of the saw had cleared its track completely. I did not see the patient until more than an hour after the infliction of the injury. I found her then pallid, with a cool skin and feeble pulse. Her intellect was unclouded, and she expressed herself as free from any pain or distress, except a little soreness about the wound. The hemorrhage had been profuse and exhausting, but it had now ceased, and the aperture in the bone was nearly filled with clot, a portion of which extended between the edges of the scalp for a short space.

I directed the hair to be carefully shaved from the vicinity of the injury, and then laid her in bed on her side, to favor the discharge of any blood that might yet be effused into the cavity of the cranium; I did not draw the soft tissues together at all, but merely laid a linen rag, dipped in cool water, over the front half of the head, directing it to be changed when it should become warm. Sago and cold water were allowed as diet, and perfect quietude enjoined. She slept occasionally during the day, and by evening had rallied somewhat, and there was no return of hemorrhage.

Until the lapse of three days the treatment was not in any respect changed; for she continued entirely comfortable, and while her reaction was perfect there had not been any evidence of the slightest disorder of her system.

The edges of the scalp were then approximated by two adhesive strips, but were not completely drawn together, as I did not deem it prudent to cover the wound in the skull by perfect coaptation of the soft tissues. On the sixth day, as every point in her case was favorable, I allowed her broths, with full farinaceous diet. During the second week granulations from the cut surfaces of the scalp filled up the space that had been allowed to remain between the edges, and meat was now permitted her, with the usual vegetables in season. She was dressed and sat up in her room in the third week, and under simple dressings the wound went on regularly and favorably to cicatrization, though the process was somewhat slow and tedious.

Between the seat of injury and the vertex of the head there was no sensation for some time after the cicatrix had formed, but on the 15th October I found that all feeling had returned.

During the entire progress of the case the child never suffered pain, sickness, fever, loss of sleep, or loss of appetite.

Upon two occasions only was it needful to administer a cathartic, to obviate a tendency to constipation.

Her mental faculties are now as perfect as ever, and her physical condition is more vigorous than before the accident.

Dr. Eaton assisted me in attending her for several days, and during my absence from the city for a time, Dr. Hoyt had charge of her for me, and from him I obtained some of the particulars above recorded.

ART. VII.—*A Case of Luxation of the Knee-Joint.* By C. HIXON, M.D., of Petersburg, Indiana.

DISLOCATION of the knee-joint, from its rare occurrence and serious nature, is deprecated by the surgeon into whose hands so formidable an injury may chance to fall. On account of the extensive surfaces of the bones entering into and forming the articulation, together with the firm manner in which they are secured by ligaments, both within and without the joint, a considerable amount of force must necessarily be brought to act upon the parts before a dislocation can be effected.

Judging from the anatomy of the parts entering into the formation of the knee-joint, a dislocation must necessarily be productive of serious injury to the soft parts, and such, I presume, will generally be found to be the case. Nor is the extent of the injury in itself, and the obstacles which may oppose a speedy reduction, all the sources of disquiet to the patient or surgeon. The prospect of an amputation, on account of gangrene following laceration of the popliteal vessels, or from protracted suppuration of the joint from destructive inflammation on the one hand, and the consequences of such serious mutilation on the other, are indeed adequate causes of disquiet to both.

The following case, which occurred in my practice recently, from the extensive injury to the parts, together with the favorable termination of the case, may, perhaps, be a sufficient apology for presenting it to the profession :—

A middle-sized, muscular man was forcibly thrown from a sleigh in February, 1856, causing a very serious dislocation of his right knee-joint; the head of the tibia was thrown forward and upward, the inferior extremity of the femur being lodged low on the posterior side of the tibia, the ends of the two bones having passed about five inches. All the ligaments, except the ligamentum patellæ, were believed to be ruptured. Extensive injury was also done to the popliteal vessels, as there was considerable extravasation of blood about the joint, and persistent coldness of the foot and leg.

Little resistance was offered to reduction. To an assistant was intrusted the charge of fixing firmly the thigh, while, by means of a lac around the ankle, extension was made, approximating toward an angle of about thirty degrees. While extension was thus slowly but steadily made, I placed my hands, locked, under the end of the femur, and pulled gently in a forward direction, when the ends of bones came easily to their proper position. Perhaps less resistance was offered to reduction in this case than usual, from the fact of my patient's fears in regard to an amputation being so powerfully excited as almost to cause syncope, and which I took occasion, designedly, to increase rather than abate, thus obviating the necessity for the use of the lancet, tobacco, or chloroform. As no appropriate surgical apparatus was at hand, (it being 10 o'clock at night, and about eight miles from town,) a roller was applied with moderate firmness to the limb, the latter bound to its fellow, and a pillow under the joint to keep it flexed sufficiently to prevent its again slipping out. It was thus suffered to remain until next day, when an inclined plane was adjusted to the limb.

The treatment consisted in the application of evaporating lotions, perfect rest of the limb, mild aperients, restricted diet, and opium to allay consecutive irritation. In four weeks the apparatus was removed and moderate working of the joint permitted. A strong leather cap was also laced firmly around the joint, to give support to the parts, and the patient allowed to go upon crutches.

The case thus progressed without any unfavorable symptoms, and the patient is now able to walk without any artificial support whatever, and to perform his daily labor as usual.

ART. VIII.—*Introduction of the Probang into the Larynx and Medicated Fluids into the Trachea.* By F. D. LEUTE, M.D., of Cold Spring.

THE question as to the possibility of introducing medicated solutions into the larynx and trachea for the relief of diseases of these organs seems to be still open. At first it was denied that the sponge could be passed into the larynx; subsequently this was generally admitted to be practicable. The impression is still, however, almost universal that the sponge cannot be passed through the chordæ vocales into the trachea. But I was very much surprised to see, in a recent periodical, a quotation from one of Trousseau's late lectures, in which he absolutely denies the possibility of even passing a sponge into the upper opening of the larynx. He says he cannot do it, and that no other man ever did it,—to such a pitch will prejudice carry one. About the year 1848, as nearly as I can recollect, I had a case under my care, in the New York Hospital, which completely settles this latter question, and, to a certain extent, the former also.

A patient in ward 9 of the first Surgical Division (according to the old arrangement of the wards) was recovering from a self-inflicted wound of the throat, which had opened the trachea, only a small fistulous opening being left, when he was attacked with aphonia, for the relief of which I was directed to apply a strong solution of nitrate of silver by means of the sponge and probang. I applied this several times, with a view of passing the solution into the larynx, and finally with complete relief, if I remember rightly, to the aphonia. But what I do remember clearly is that, on two occasions at least, after performing the operation, the skin around the fistulous opening in the neck was *stained distinctly with the nitrate of silver* which had mingled with the usual mucous discharge from the interior of the trachea.

This case then establishes the fact that it is practicable to introduce the sponge into the larynx, and to introduce medicated solutions (I do not say the sponge) into the trachea.

ART. IX.—*Plastic Operation upon the Ear.* By JOSEPH PANCOAST, M.D., Professor of Anatomy in Jefferson Medical College, Philadelphia. Reported by WM. M. BREED, M.D.

IN August last, a young man disfigured by the loss of a considerable portion of his right ear, from a bite in a fight, applied to Professor Pancoast to have the deformity relieved by a plastic operation. Two months had elapsed since the occurrence of the injury. The condition of the parts was as follows:—The cicatrix an irregular one, but imperfectly healed, and evidently not in a healthy condition: the amount of loss sustained was fully one-third of the external ear, and this was considerable, as the ears were unusually large and pendulous—that upon the opposite side measuring nearly three inches in length. The entire lobule was gone. A line carried across the inferior portion of the concha to a point on the helix opposite the auditory meatus will afford a good idea of the course of the cicatrix.

The operation was performed in the following manner:—The entire edge of the wound was freshened by paring, and the cartilage removed to a greater depth than the integument; a portion of the cutaneous tissue was then raised from over the upper extremity of the sterno-cleido-mastoid muscle of more than twice the size of the lost part, allowing thus for shrinking, and of such a shape that, when doubled upon itself, it should correspond exactly to the same portion of the sound ear, the pedicle representing the attachment of the lobule. The flap being doubled so as to present both surfaces covered with integument was then secured to the raw edges of the ear by a few interrupted sutures, and well sustained with strips of isinglass-plaster. The parts united kindly except a small point of the posterior edge of the flap, where there was a little sloughing, owing, most likely, to the presence of coagulated blood between its folds. The operation was in every respect a successful one. The attachment of the new lobule being made to take the same position and direction as the natural one rendered the shape of the two ears almost exactly similar.

ART. X.—*Bony Tumor of the Scrotum.* By JOHN G. KERR, M.D., late of Canton, China.

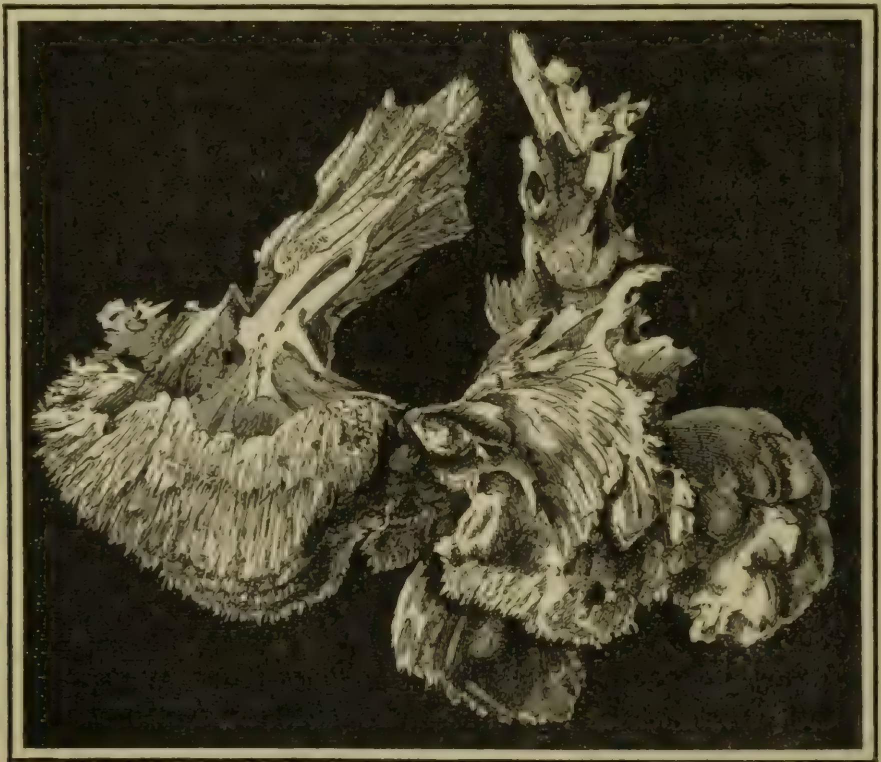
A MAN twenty-eight years old, of good constitution, and enjoying good health, was admitted into the Ophthalmic Hospital at Canton, China, in September, 1856.

Twenty months before the time of admission, a tumor began to grow in the patient's scrotum. It steadily increased, and had now attained such a size as to be very inconvenient, and to interfere with his occupation, which was that of a laborer in the country. The tumor was about as large as an infant's head, very hard and dense, and seemed to the touch almost like a mass of stone or wood inclosed within the skin. The skin was healthy, and freely movable over all parts of the tumor.

At my request the operation for its removal was performed by Dr. Geo. B. Newton, Assistant-surgeon of H. B. M. brig "Bittern," who had rendered me important assistance in several operations. The patient was placed under the influence of chloroform, and the tumor skilfully dissected away. The left testicle was carried down before the tumor, and was removed with it. Both testicles were healthy, excepting a slight hydrocele.

The weight of the tumor was five pounds, and was found to consist of numerous cartilaginous lobes of various sizes, densely compacted together with cellular tissue, in which large quantities of bone were deposited. When macerated and cleaned, it presented somewhat the appearance of a coral formation, springing from an irregular semicircular base. Numerous spiculæ of bone were scattered throughout the tumor where apparently separate points of ossification had been established in the different lobules. So numerous were these spiculæ that the knife could scarcely be put into the tumor without touching them.

A part of the bone has a compact outer plate, but the greater portion is spongy and cellular, and composed of radiating spiculæ attached to a firmer base. The process of ossification was interrupted by the operation, and as the tumor had not ceased growing, it is likely that the anomalous formation would have continued to enlarge indefinitely if it had not been removed.



The above figure represents one-half of the bony deposit extracted from the mass by maceration, and now in the possession of Dr. T. G. Richardson, of the Pennsylvania Medical College.

No adequate cause could be discovered for the development of such a tumor in such a place. The patient knew of no injury he had received in the parts. Not only was his general health good, but no alteration of the tissues of the scrotum had taken place.

[A subsequent microscopical examination of the specimen proved it to be genuine bone.—EDS.]

ART. XI.—*Hospitals of Paris.* Extracts from letters of RICHARD J. DUNGLISON, M.D., of Philadelphia.

* * * * * * OF the Medical Schools and Hospitals of Paris you know much from the report of those who have been able to partake of their advantages. And yet, if you have formed any idea of their superiority over our own, you will find, upon a more intimate knowledge of their merits from personal inspection, that there are many points in which they fall far short of ours.

In the first place, as regards the lecture-rooms, they are by no means as imposing as you would imagine the annual influx of medical visitors in attendance upon the different teachers ought to have the effect of making them. Compared with the lecture-rooms of our medical colleges in America, they are insignificant. I was at Hôtel-Dieu yesterday morning, and found it well filled with students, but in a room not very comfortable, and not well adapted for their convenience. The subject of ventilation has not been studied very closely in the construction of either the hospitals or lecture-rooms. The entrances to the latter are, as a general rule, below the level of the room, and there is scarcely ever more than one small door and a narrow staircase leading into the auditorium. There are few windows, and these, I notice, are generally kept closed; the entrance at the foot of the stairs and the steps themselves are almost always blocked up with students: no draught of air can possibly be maintained under these circumstances, and the young men are expected to enjoy the hour or hour and a half they spend there, at a temperature at which fans and fresh air would be a luxury. M. Ricord's plan of lecturing under the trees is the most agreeable; his lecture-room in the open air is the best ventilated one in Paris.

As regards the study of specialties, for which the French capital has acquired an extensive reputation, there are many who maintain that Paris alone possesses pre-eminent advantages of this kind. Overlooking the equally important and perhaps more ample hospital resources of Vienna, they cannot cast their eyes beyond Paris, or are so much dazzled by what is presented to them in that city, that they are blinded to the true condition of medical science elsewhere. If the observation proceeds from one who is not an American he does not look beyond the Atlantic, or he might, perhaps, in our own city of Philadelphia, find valuable means of private instruction offered to the medical student, both during an attendance upon the winter courses of lectures, and in special courses upon important branches in the intervals between the winter sessions. But it has been the fashion to exalt Paris into a sort of medical Mecca, to which trans-Atlantic and cis-Atlantic pilgrimages are to be made; and it is likely enough that this reputation will exist for some time, however undeserved it may be, or whatever position other cities may occupy in the scale of medical merit.

Of lectures and lecturers I have something to say, although I have scarcely been long enough here to give you anything but first impressions. I am confident, however, that they would be confirmed by further experience, and they are the unbiassed convictions of one who is not accustomed to judge over-harshly; so that you can receive them as at least honest criticisms. I determined, immediately after my arrival here, to devote a few hours of each morning to visiting hospitals, and on Thursday morning last commenced with the Hôpital du Midi, where M. Ricord lectures and holds his clinics.

This hospital was founded toward the close of the last century, upon the site of the old convent of the Capuchins. It has an ancient look even in its modern state, and has, I believe, about six hundred beds. M. Ricord went through his wards prescribing for the benefit of his patients, and joking for the amusement of his pupils. He then lectured for about an hour and a half under the trees upon sarcocele, varicocele, etc. But I derived less profit from the lecture than satisfaction at seeing, for the first time, one whose labors in the investigation of the nature and treatment of a special class of disorders has made him so widely known. He talks so fast and puns so incessantly, that it is very difficult for a foreigner to follow him; and they who are the most familiar with the language in all its idiomatic observances find it at times quite a task to appreciate the points, when his countenance evidently betrays that he has perpetrated what he esteems to be excellent jokes. I enjoyed the lecture, however, from its peculiarities and its novelty.

We had afterward a clinic in the open air, and several operations for phimosis and paraphimosis, of which I could see but little. There, as elsewhere, when you are most anxious to observe what is going on, the students crowd around the bed, hang over the patient, and, without any regard to each other's personal comfort, place themselves in such sort that many must be obliged to give up all idea of seeing the operation. You find yourself tightly wedged in a solid mass, unable to extricate yourself, and without power to elevate yourself so as to look over heads, or to depress yourself to see under axillæ. I was able, however, to catch a glimpse occasionally of one case, which, when placed under the influence of chloroform, very nearly proved fatal from its effects. I have never seen any one resuscitated who seemed so near death. Fifteen or twenty minutes elapsed before he gave any symptoms of returning animation, and then only after he had been well beaten by all the *externes* and *internes*, and artificial respiration by insufflation, etc., had been thoroughly practiced. One patient, who bore an operation remarkably well without being chloroformized, was told by M. Ricord that he was evidently born for that *spécialité*,—viz. to be operated on. The near approach to death of the subject of his operation seemed to disturb his equanimity but little, and he punned away and preserved as comical an expression of countenance as if nothing unusual was occurring.

On Friday, accompanied by a young American professional friend—Dr P. of Philadelphia—I visited *La Charité* and the *Hôpital Militaire du Val-de-Grâce.* At the former I met M. Velpeau; went through the wards with him, and saw him perform one or two little operations, such as opening abscesses of an unimportant character. I also heard him lecture upon surgical affections of the inferior maxillary bone, but was compelled to leave before I was able to glean much useful information. The class here, as at most of the hospitals, is small; M. Trousseau, I am told, has the largest attendance. M. Ricord's class, on Thursday, was much more numerous than M. Velpeau's on Friday. The latter teacher is becoming advanced in years; he goes from bed to bed without saying much, and what he does say is not very audible to those around the patient. As a lecturer he is not remarkable: he lives upon his former popularity as a surgeon, but possesses no very strong claims to attraction as a clinical teacher, at the present time. Such, at least, was my conviction,—a mistaken idea, perhaps, formed at first sight, which after-experience might correct. La Charité has accommodation for fewer patients than Hôpital du Midi. It contains beds for four hundred, and is intended, I believe, for the reception of some of the rarer forms of disease. It was built in 1613, for the use of the Frères de la Charité.

After leaving M. Velpeau's lecture-room, I went to the Val-de-Grâce. Baron Larrey, to whom I had a letter of introduction from my father, kindly put me under the charge of one of his officials, and I was thus enabled to see the large establishment to great advantage. The Museum is a very interesting one, and contains many curious pathological specimens, some of them deposited by the present Baron, others profoundly interesting as evidences of the skill of his celebrated father. Nearly two and a half centuries ago this hospital was built, to be devoted to religious purposes, as a convent, under the patronage of Anne of Austria. It is now the great military hospital of Paris, and has accommodations for about 1500 patients.

Yesterday I had the pleasure of hearing M. Trousseau lecture on vaccination at Hôtel-Dieu. The class was larger than any I had seen; about two hundred or two hundred and fifty students were present, many of them Americans, and some of them English. M. Trousseau is a capital lecturer; so clear that it is not at all difficult for a foreigner to follow him, and on this account, as well as for other substantial reasons, he is, probably, more popular, as a teacher, than any of his professional brethren. His manner, too, is that of a gentleman, and his voice pleasant to listen to. Hôtel-Dieu is probably the most ancient hospital in Europe, being now at least 1200 years old. Different rulers have taken it under their special protection, and afforded it substantial pecuniary aid; while rich legacies have been bestowed upon it by wealthy citizens of Paris. The establishment is divided by an arm of the river, but the two portions are connected by a private bridge. Twenty-three rooms are devoted to the purposes of the hospital, and contain 1200 beds. There are certain classes of diseases, which the regulations of Hôtel-Dieu prohibit from being received, such as those of children, and obstetrical, incurable, insane, and venereal cases, as well as chronic affections. This rule prevents the hospital from being over-crowded.

After leaving Hôtel-Dieu, I visited *La Pitié*, but, unfortunately, arrived there too late for M. Maisonneuve's lecture. He was talking to a few young men on the subject of *Écrasement* and the *Écraseur*, and had several instruments lying near him,—some of them like those which M. Chassaignac is in the habit of using; others, M. Maisonneuve's modification of the original: all of them rather formidable instruments to a novice in the profession. MM. Chassaignac and Maisonneuve are the great *Écraseurs* of Paris; the former, perhaps, makes it more of a hobby, but both are extremely fond of employing this method of surgical relief wherever practicable. The former never neglects an opportunity of using it, but I do not think he renders himself more popular, from this constant employment of his own invention, than others, who, with their patient's interest always in view, vary their treatment according to the nature of the case, instead of experimenting with the idea of making all cases respond to one treatment.

This morning I visited *Lariboissière*, the most recently constructed hospital in Paris. Commenced in the year 1846, it has had, in the short space of time which has elapsed from that event to its present completed condition, the unusual fortune to be known at different times under three distinct names. Founded at a time when Louis Philippe was popular with the people of Paris, it received the name of *Hôpital de Louis Philippe*, and that title it retained until the capricious tastes of the French people changed the form of national government and rendered them miserable, for a while, under the anarchy of a Republic swayed by the whims of the populace. It was then known as the *Hôpital de la République*, but the existence of this title was almost as short-lived as the form of government that gave it its name. The spirit of change again invaded the French people, and when the Empire succeeded to the Republic, the name attached to this hospital became, of course, odious in the sight of the imperial authorities, as well as of the imperially disposed Parisians. It was then that, in compliment to the Countess Lariboissière, who had handsomely bequeathed eight millions of francs to the use and purposes of the hospital, it became known under the name which it now holds, and which it will probably retain permanently.

Here, in former times, was situated the Convent of the Lazarists and all its vast estates. The ground is now partly occupied by the most complete and best-ventilated establishment of the kind in Paris. What has been neglected in other hospitals, as regards architectural beauties and general details, tending to the comfort and restoration of their occupants, has here received every attention; and the attachés of Lariboissière may congratulate themselves upon the satisfactory manner in which everything has been arranged. M. Chassaignac, whose name has been heard much more frequently of late years, in consequence of the attention which his *Écraseur* has excited, lectured here to a moderate class. He is a tolerable lecturer, and has the good fortune to have an amphitheatre to receive his students in, which, although small, is comfortable compared with those of the other hospitals. Great room for improvement, however, still remains, and one cannot but wonder why the continual influx of large numbers of young medical men into Paris should not, ere this, have had the effect of attracting the attention of those in authority at the hospitals to the amelioration of this important matter. The Lariboissière lecture-room is the first step toward a change.

I have been so short a time in Paris that I have not been able to make myself acquainted with any but the prominent medical attractions. A residence of some duration is requisite to become intimately conversant with the routine of the hospitals, the peculiarities of lecturers, and modes of instruction. The French capital abounds in establishments for the relief of the sick and suffering, and it is a matter of historical interest to compare their present superior condition with the deplorable state of wretchedness, and the consequent mortality, which prevailed up to the close of the last century in these ill-conducted charities. It was not until investigations were made, with a view to improvement, that the people of Paris became fully aware of the almost incredible neglect into which they had fallen. New plans were devised for ameliorating them, and, under a new system of management, they speedily assumed their present advanced condition.

ART. XII.—*Mortality of Philadelphia, for the months of July, August, and September,* 1857; *collated from the Health-Office Record.* By WILSON JEWELL, M.D.

DURING the third quarter there have been 3269 deaths placed on record at the Health-Office. The number of days represented was 98, making 14 weeks, from June 27th to October 3d. This furnishes the average of 33⅓ deaths per diem.

By reference to the same period in 1856, and which embraced only 13 weeks, or 91 days, it will be seen that the deaths amounted to 3971, or *plus* 702 those of the present quarter, being an equivalent of 9·69 per cent.

Taking the average deaths for the like quarters of 1852, '53, '54, '55, and '56, which would be 3519, it will still leave the deaths for the present quarter 3·68 per cent. below the average.

From these comparisons of the deaths during the third quarter of each of the above years, when we look for an increased mortality as the result of the usual endemics of the season, the conclusion is, that we have passed through a remarkably healthy summer, and have been entirely free from any infectious or epidemic disease.

The deaths charged to certified diseases number 2679, leaving 590, or 18 per cent., as the result of debility, external causes, old age, stillborn, and unknown.

The deaths from stillborn were 167. Of these, 61·08 per cent. were males, and 38·92 per cent. females, or 102 males and 65 females.

Of the sexes, we find 1776 males and 1493 females, showing an excess of male deaths equal to 8·65 per cent.

The mortality among children under one year (exclusive of stillborn) was 1126, or 36·29 per cent. Of those under five years it was 1774, or 57·18 per cent.; while all under twenty years amounted to 2002, or 64·53 per cent. These figures show that the deaths decrease rapidly in proportion to the age from the expiration of one year up to twenty, that those within the first year, exceed those from over one year up to twenty by 12·48 per cent.

During the first decennial period of manhood—that is, between twenty and thirty years—the mortality is greater than at any other, amounting to 274; and from this decenniary onward to extreme old age there is a gradual diminution.

Between the ages of ninety and one hundred there were 14 deaths. The highest number of deaths reached in any one week was 324, between the 22d and 29th of July; of these, 219, or 64 per cent., were children. But in the week ending August 1st, there were 227 children out of 314 deaths. In this week, therefore, 72 per cent. of the mortality was among children.

During this quarter the deaths from the Almshouse made up 5 per cent. of the mortality; while the colored population of the city contributed 4 per cent.

The "Endemic Diseases" furnished a far less proportion of the deaths than is usual for the third quarter of the year, amounting in this instance to 932 only, or 24 per cent. less than those for the preceding year, and falling 10 per cent. below the average of deaths for the third quarters of the past five years.

The most perceptible change will be found in the falling off in the deaths from cholera infantum, scarlet fever, dysentery, and measles. The deaths from fevers of all types amounted only to 131; while last year they contributed 295, a difference of 38 per cent. in favor of the present quarter.

The deaths from cholera infantum are less by 14 per cent. than those for the third quarter of 1856; dysentery, 23 per cent.; scarlet fever, nearly 50 per cent., and measles, 94 per cent.

The deaths from "Sporadic Diseases" have been 7 per cent. less than those for the third quarter of 1856.

From "Nervous Diseases" there were 583 deaths; of these, 406, or 69 per cent., were under five years of age. Convulsions alone furnished 32 per cent., and inflammation of the brain 18 per cent.

The deaths from diseases of the "Organs of Respiration" show a slight increase over those for the like period of 1856. This increase is made up by the deaths from pulmonary consumption and inflammation of the lungs.

As compared with the deaths for the third quarter of 1856, we find that from the "Organs of Circulation," which furnish 70 deaths, there is an increase of 12 per cent. This increased mortality is charged to "Diseases of the Heart," (what diseases?)

Under the head, "Digestive Organs," we notice 98 deaths from "Inflammation of the stomach and bowels,"—double those of last year, which were only 49.

In the deaths from diseases of the "Organs of Generation," which count only 8, there is a decrease of two-thirds from those of last year. The most perceptible improvement is in those from puerperal fever and childbed. Last year they amounted to 17, whereas in the quarter under review they were only 6.

The deaths from "Old Age" have been 61,—an increase of 25 over those of 1856.

The deaths from "External Causes" present only a limited increase.

The "Stillborn," however, have advanced 9 per cent., compared with those for the third quarter of 1856.

TABLE No. 1.

Deaths for the Third Quarter of 1857, *classified.*

	July.	August.	Sept.	MALE.			FEMALE.			Total.
				July	Aug.	Sept	July	Aug.	Sept	
1. *Endemic and Contagious Diseases.* Zymotic or Epidemic	323	390	219	175	211	132	148	179	87	932
2. *Uncertain or General Seat.* Sporadic Diseases	153	181	185	81	99	86	72	82	99	519
3. Nervous System	226	192	165	130	100	92	96	92	73	583
4. Organs of Respiration	202	157	179	106	78	97	96	79	82	538
5. " Circulation	26	29	15	10	17	6	16	12	9	70
6. Digestive Organs	53	57	48	23	23	23	30	34	25	158
7. Urinary Organs	4	4	.....	3	2	.....	1	2	.....	8
8. Organs of Generation	2	5	1	.....	.....	.....	2	5	1	8
9. " Locomotion	4	5	1	4	4	1	.....	1	.....	10
10. Integumentary System	3	1	.....	2	.....	.....	1	1	.....	4
11. Old Age	19	28	14	5	11	3	14	17	11	61
12. External Causes	51	33	56	42	27	43	9	6	13	140
Stillborn	63	39	65	37	23	42	26	16	23	167
Unknown	33	25	13	19	15	4	14	10	9	71
	1162	1146	961	637	610	529	525	536	432	3269

TABLE No. 2.

1. *Endemic and Contagious Diseases—Zymotic or Epidemic.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Cholera	1	.....	.....	.....	.....	.....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
" Infantum	278	230	278	230	336	152	12	5	2	1	...	...	...	...	...	...	...	...	...	508
" Morbus	4	5	4	2	1	2	3	...	...	...	2	1	...	...	...	...	...	...	...	9
Croup	25	6	25	6	12	9	8	1	1	...	...	...	...	...	...	...	...	...	...	31
Diarrhœa	39	27	36	21	39	15	1	1	...	1	3	...	1	2	1	2	...	...	...	66
Dysentery	82	62	53	39	34	32	10	6	5	5	7	10	8	6	14	4	2	1	...	144
Erysipelas	8	7	4	4	6	1	...	...	...	1	2	2	1	1	1	...	...	...	...	15
Fever, Bilious	6	1	1	.....	.....	1	...	...	...	...	1	3	...	2	...	...	...	...	...	7
" Congestive	2	1	1	1	2	.....	...	...	...	...	...	...	1	...	...	...	...	...	...	3
" Gastric	.....	1	.....	.....	.....	.....	...	...	...	...	...	...	...	...	...	...	1	...	—	1
" Remittent	3	1	3	1	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	4
" Scarlet	26	34	25	34	7	15	23	12	2	...	...	1	...	...	...	...	...	...	...	60
" Typhoid	20	25	6	10	.....	2	3	3	1	7	11	9	4	2	2	1	...	—	...	45
" Typhus	8	3	1	2	.....	.....	...	...	1	2	2	5	1	...	...	...	...	...	...	11
Hooping-Cough	8	5	8	5	8	3	2	...	...	...	...	...	...	...	...	...	...	...	...	13
Influenza	4	3	4	3	4	2	...	...	1	...	...	...	...	...	...	...	...	...	...	7
Measles	.....	2	.....	2	.....	[illegible]	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Smallpox	4	1	4	1	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...	5
	518	414	453	361	451	238	65	30	13	17	28	31	17	13	18	7	3	1	...	932

2. *Uncertain or General Seat—Sporadic Diseases.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Cyanosis	7	1	7	1	4	3	...	1	...	...	...	...	...	...	...	...	...	...	...	8
Abscess	2	7	.....	3	1	1	1	...	...	...	2	...	2	1	1	...	...	...	...	9
Cancer	9	22	3	2	.....	1	3	...	...	1	1	5	3	10	6	1	...	...	...	31
Debility	67	48	47	31	68	7	1	1	1	...	7	3	3	9	7	4	4	...	...	115
Dropsy	27	18	5	4	.....	2	5	...	2	...	4	9	8	5	5	4	1	...	...	45
Gangrene	1	.....	1	.....	.....	.....	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Gout	.....	1	.....	.....	.....	.....	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Hemorrhage	3	7	1	2	1	1	...	...	1	...	1	4	1	...	...	1	...	...	...	10
Inflammation	1	.....	1	.....	1	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
" Throat	.....	1	.....	1	.....	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	1
Inanition	16	6	13	5	18	.....	...	...	...	...	...	1	...	...	1	1	...	1	...	22
Marasmus	117	114	117	111	162	47	14	4	1	...	...	1	2	...	...	...	...	...	...	231
Scrofula	5	8	3	6	4	3	...	...	2	...	1	3	...	...	...	...	...	...	...	13
Sore Mouth	.....	2	.....	2	1	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	2
Sore Throat	1	.....	1	.....	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Tabes Messenterica	10	14	10	14	20	3	1	...	...	...	...	...	...	...	...	...	...	...	...	24
Tumor	.....	2	.....	.....	.....	.....	...	...	...	...	...	1	...	...	1	...	...	...	...	2
Ulceration	.....	2	.....	.....	.....	.....	...	...	...	...	1	1	...	...	...	...	...	...	...	2
	266	253	209	182	280	69	27	7	7	1	17	28	19	25	21	11	6	1	...	519

3. *Nervous System.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Apoplexy	20	6	.....	.....	.....	.....	...	...	...	...	...	4	7	5	6	4	...	...	...	26
Congestion of Brain	33	27	16	17	21	6	3	2	...	1	8	4	6	4	3	2	...	...	...	60
Convulsions	100	88	93	83	115	44	12	5	...	...	3	2	1	2	4	...	...	...	...	188
Coup de Soliel	6	.....	1	.....	.....	.....	...	1	...	...	2	2	...	1	...	...	...	...	...	6
Cramp	3	2	3	2	3	.....	1	...	1	...	...	...	...	...	...	...	...	...	...	5
Disease of the Brain	20	17	12	15	20	6	1	...	...	...	2	3	2	2	1	...	...	...	...	37
Dropsy of the Brain	37	29	37	25	29	23	10	...	...	...	1	1	...	...	2	...	...	...	...	66
Effusion of the Brain	16	23	13	21	15	12	4	3	...	...	2	...	1	...	2	...	...	...	...	39
Epilepsy	1	.....	.....	.....	.....	.....	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Fever of the Brain	.....	1	.....	1	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Inflammation of the Brain	55	50	42	42	43	14	19	5	2	1	8	2	6	2	2	1	...	...	...	105
Mania-a-Potu	14	3	.....	.....	.....	.....	...	...	...	...	1	5	10	1	...	...	...	...	...	17
Palsy	15	14	1	2	1	.....	1	...	...	1	1	2	2	7	9	4	1	...	...	29
Softening of the Brain	.....	1	.....	.....	.....	.....	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Tetanus	2	.....	2	.....	1	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	2
	322	261	220	208	248	106	52	16	3	3	28	26	35	24	30	11	1	...	...	583

4. *Organs of Respiration.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Asthma	3	4	2	2	4	...	...	...	...	...	.....	1	...	2	...	...	...	...	...	7
Congestion of the Lungs	17	12	9	6	5	3	3	2	2	...	3	6	2	1	...	2	...	...	...	29
Consumption of the Lungs	198	188	48	44	14	16	5	8	8	41	117	86	42	32	12	5	...	...	...	386
Disease of the Lungs	3	2	1	...	...	...	1	...	...	...	1	1	1	...	1	...	...	...	...	5
Dropsy of Chest	5	6	3	2	1	1	1	...	1	1	.....	...	1	2	1	1	1	...	...	11
Hemorrhage of Lungs	2	.....	1	...	1	...	...	...	...	...	.....	...	1	...	...	...	...	...	...	2
Inflammation of Bronchi	10	10	7	4	8	1	1	...	...	1	1	1	2	1	2	2	...	...	...	20
" Chest	3	3	3	3	3	1	1	1	...	...	.....	...	...	...	...	...	...	...	...	6
" Larynx	.....	1	...	1	...	1	...	...	...	...	.....	...	...	...	...	...	...	...	...	1
" Lungs	36	29	21	20	20	10	5	5	...	1	7	4	6	3	3	1	...	...	...	65
" Pleura	3	1	...	...	...	...	...	...	...	...	.....	...	1	2	...	...	1	...	...	4
" Tonsils	1	.....	1	...	1	...	...	...	...	...	.....	...	...	...	...	...	...	...	...	1
" Trachea	.....	1	...	1	1	...	...	...	...	...	.....	...	...	...	...	...	...	...	...	1
	281	257	96	83	58	33	17	16	11	44	129	99	56	43	19	11	2	...	...	538

5. *Organs of Circulation.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Anæmia	3	2	2	...	2	...	...	...	...	...	...	...	...	...	1	2	...	...	...	5
Disease of Heart	22	28	5	6	5	2	...	...	3	1	5	13	6	3	7	5	...	...	...	50
Dropsy of Heart	5	6	1	3	...	...	1	1	1	1	1	...	3	2	1	...	...	...	...	11
Enlargement of Heart	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2
Gout of Heart	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Inflammation of Heart	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
	33	37	8	9	7	2	1	1	4	2	7	14	11	5	9	7	...	...	...	70

6. *Digestive Organs.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Cirrhosis of Liver	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Colic	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Consumption of Bowels	1	3	...	2	1	...	...	1	...	...	...	...	1	...	1	...	...	...	...	4
Disease of Liver	4	4	2	...	1	1	...	...	...	...	...	...	2	2	1	1	...	...	...	8
Disease of Stomach and Bowels	1	2	...	2	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3
Dropsy of Liver	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Dropsy of Abdomen	1	3	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...	...	...	4
Dyspepsia	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Hernia	1	1	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	2
" Strangulated	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Icterus	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2
Inflammation of Liver	6	4	2	...	1	...	1	...	...	...	...	2	2	3	1	...	...	...	...	10
" Peritoneum	2	8	1	3	...	1	...	...	1	2	...	3	1	2	...	...	...	...	...	10
" Stomach and Bowels	43	55	26	29	31	9	8	3	...	4	10	11	8	6	5	3	...	...	...	98
Obstruction of the Bowels	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Scirrhus of Intestines	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Teething	3	3	3	3	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	6
Ulceration of Bowels	1	1	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2
Worms	2	...	2	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2
	69	89	36	41	41	14	10	6	1	6	10	22	16	14	12	6	...	...	...	158

7. *Urinary Organs.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Albuminuria	1	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2
Disease of Kidneys	1	1	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	2
Inflammation of Bladder	2	1	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	3
" Kidneys	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
	5	3	1	...	...	...	...	1	...	...	3	...	...	1	3	...	...	...	...	8

8. *Organs of Generation.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Childbed	...	3	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	3
Fever, Puerperal	...	3	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	3
Hemorrhage from Uterus	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Inflammation of Uterus	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
	...	8	...	1	...	...	...	...	...	1	5	2	...	...	...	...	...	...	...	8

9. *Organs of Locomotion.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Coxalgia	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Disease of Spine	3	1	3	1	2	1	...	...	...	1	...	...	...	...	...	...	...	...	...	4
Malformation of Spine	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Rheumatism	4	...	1	...	...	...	...	...	1	...	1	...	1	1	...	...	...	...	...	4
	9	1	6	1	3	1	...	...	2	1	1	...	1	1	...	...	...	...	...	10

10. *Integumentary System.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Carbuncle	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Eruptions	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Ozena Maligna	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Ulceration of Scalp	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
	2	2	1	...	...	1	...	...	...	...	...	1	1	...	...	1	...	...	...	4

11. *Old Age.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Old Age	19	42	...	...	...	...	...	...	...	...	...	...	...	2	3	15	29	12	...	61

12. *External Causes.*

	Males.	Females.	Boys.	Girls.	Under 1 yr.	1 to 2.	2 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 to 110.	Total.
Asphyxia	2	1	2	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Burns	1	4	1	4	1	1	1	...	...	2	...	...	...	...	...	...	...	...	...	5
Casualties	27	8	8	2	3	...	2	1	1	3	6	8	3	3	2	2	1	...	...	35
Drowned	62	8	21	6	4	1	1	9	5	7	20	12	10	...	1	...	...	...	...	70
Fracture	4	...	1	...	1	...	...	...	...	...	2	1	...	...	...	...	...	...	...	4
" Leg	1	...	.....	...	.....	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
" Skull	2	...	1	...	.....	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2
Intemperance	3	4	.....	...	.....	...	...	...	...	...	1	3	2	1	...	...	...	...	...	7
Suffocation	.....	1	.....	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Suicide	8	2	.....	...	.....	...	...	...	...	...	2	3	2	3	...	...	...	...	...	10
Violence	1	...	.....	...	.....	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Wounds	1	...	1	...	.....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
	140	28	35	14	13	2	4	10	7	13	33	27	17	7	4	2	1	...	...	140
Stillborn	102	65	102	65	167	...	...	...	...	...	...	...	...	...	...	...	...	...	...	167
Unknown	38	33	19	17	25	5	1	2	...	3	13	7	9	2	4	...	...	...	...	71

TABLE No. 3.

Deaths for the Third Quarter of 1857, *at fifteen distinct periods of life.*

Under 1 year	1126
1 to 2	471
2 to 5	177
5 to 10	89
10 to 15	48
15 to 20	91
20 to 30	274
30 to 40	257
40 to 50	182
50 to 60	137
60 to 70	123
70 to 80	71
80 to 90	42
90 to 100	14
100 to 110	.....
	3102
Stillborn	167
Total	3269

Included in the above table are 177 from the Blockley Almshouse; 150 colored people and 27 from the country, to wit:—

	July.	August.	September.	Total.
Almshouse	57	76	44	177
Colored People	51	62	37	150
Country	8	8	11	27
	116	146	92	354

TABLE No. 4.

The following table gives the total number of deaths for each week during the quarter, with the sexes, adults and children:—

1857.	Males.	Females.	Adults.	Children.	Total.	Total Monthly.
From June 27th to July 4th	101	73	65	109	174	......
" July 4th to July 11th	110	104	86	128	214	......
" July 11th to July 18th	111	89	78	122	200	......
" July 18th to July 25th	146	114	70	190	260	......
" July 25th to August 1st	170	144	87	227	314	1162
" August 1st to August 8th	157	144	87	214	301	......
" August 8th to August 15th	148	136	85	199	284	......
" August 15th to August 22d	129	108	87	150	237	......
" August 22d to August 29th	176	148	105	219	324	1146
" August 29th to September 5th	129	110	69	170	239	......
" September 5th to September 12th	113	102	75	140	215	......
" September 12th to September 19th	111	67	66	112	178	......
" September 19th to September 26th	103	79	83	99	182	......
" September 26th to October 3d	73	74	57	90	147	961
Total	1777	1492	1100	2169	3269	3269

ART. XIII.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

HOSPITAL BUILDING, Spruce Street, above Eighth.

THE Pathological Society of Philadelphia was organized on Wednesday evening, October 14th, 1857, by the adoption of a Constitution and election of the following officers:—

President,	DR. GROSS.
Vice-Presidents,	DRS. LA ROCHE AND STILLÉ.
Treasurer,	DR. ADDINELL HEWSON.
Secretary,	DR. DA COSTA.
Assistant-Secretary,	DR. T. G. MORTON.

The Society then proceeded to the exhibition of specimens.

Fatty Degeneration of the Liver.—DR. S. W. MITCHELL exhibited a liver in a state of fatty degeneration, removed from a child, aged five and a half years, born in Georgia. The father died of phthisis, the mother is now ill with it; the boy had had repeated attacks of diarrhœa. His final illness began with vomiting and purging, easily subdued by medicine, but recurring with typhoidal symptoms after six days. A slight convulsion preceded his death by a few hours. The chief point in regard to his constitution which seemed worthy of note, was the facility with which the slightest catarrh prostrated and reduced him. This was explained after death by the presence of disease of the lung.

Post-mortem Section.—External appearance very thin. Brain healthy. Lungs; the right at the apex presented two or three small tubercular masses of the size of large peas. The intestines were generally congested, but offered no evidence of inflammation. The glands of Peyer were healthy, as well as those of the mesentery. The stomach about the greater curve was altered by chronic inflammation. The kidneys were healthy except at the lower ends of the renal tubes, whose cavities were very generally filled up by masses of yellow matter, which tinted the divided cones of a golden color. The liver was more yellow throughout than is usual, and exhibited everywhere to the microscope the evidence of an unhealthy excess of fat. On the upper surface the fat presented itself in very distinct cresentic markings, which offered a very curious contrast to the hue of the more healthy tissue about them.

In this case fatty degeneration of the liver preceded the general development of pulmonory tubercle.

Dr. Mitchell was requested to report further on the nature of the yellow matter in the uriniferous tubes.

WEDNESDAY EVENING, Oct. 28th, 1857.

The President in the chair.

DR. MITCHELL submitted the following report regarding the kidneys presented at the last meeting :—

"The kidneys are healthy as to tissue, but the lower end of most of the tubes is filled with dark masses which tint the renal cones of a golden yellow. Under the microscope these masses are observed to be rounded, and acicularly crystallized, the needle-like composite crystals radiating from the centre of each mass. The arrangement is common to crystalline masses of certain urates, rarely to phosphate and oxalate of lime, and always to carbonate of lime. To my great surprise I found these masses to be the last-named substance,—a fact as to which I was so skeptical that I examined them repeatedly, and with great care. By scraping several cones with a knife, I collected enough for micro-chemical analysis. The acicular and radiated structure came out as they dissolved in acetic acid, which they did easily, with development of bubbles of gas. After complete dissolution, the addition of a drop of oxalic acid in solution produced a white precipitate. From these reactions several times observed, as well as from their general form, I therefore conclude the masses to be carbonate of lime. The smaller crystals higher up in the tubes were yellow and transparent, and were probably uric acid, although their amount was too small to admit of even micro-chemical research. The occurrence of carbonate of lime in human urine is very rare. It can only take place in a neutral or alkaline secretion. I have notes of a case from Wilmington, Del., which I saw two years ago. The patient was a retired merchant, who suffered with dyspepsia of an irritative nature. The deposition of the carbonate was in the form of amorphous masses, and a few such crystalline radiated forms as are seen in the case before us. In another instance the urine of a hysterical woman was loaded with quantities of pulverized chalk, placed in it to deceive the attending physician."

In answer to a question whether the urine had been examined during life, Dr. Mitchell stated that it had, but that it had presented nothing remarkable.

Fistula of the Gall-bladder.—DR. MORTON exhibited a specimen of fistula of the gall-bladder, taken from a female aged sixty-five, who died from diarrhœa; she had been subject to attacks of jaundice, accompanied with great pain in the region of the liver for many months. In July, 1857, she noticed a tumor over the region of the liver, which continued to increase, and finally opened, in the month of August, and discharged a considerable quantity of fluid. The opening was near the twelfth rib, about four inches from the median line; the discharge continued from the fistulous orifice until her death.

Atrophy.—The liver was much increased in size, of a bright yellow color, and fatty. The gall-bladder was firmly attached to the walls of the abdomen; on opening it a fistulous orifice was found leading from the gall-bladder through the parietes of the abdomen, and opening at the point above mentioned. The walls of the bladder were much increased in thickness; numerous gall-stones completely blocked it up, obstructing also the cystic duct; no gall-stones were observed in the discharge which came from the fistulous opening. The body was much jaundiced.

DR. STILLÉ remarked that he was at a loss to understand why jaundice was present in the case, as only the cystic duct was closed; he did not consider the fatty degeneration as sufficient to account for it. With regard to the evidently fatty state of the liver, he wished to draw attention to the distinction between fatty deposit and fatty degeneration.

DR. KEATING alluded to several cases of fatty degeneration accompanied by jaundice.—A discussion took place about fatty degeneration and fatty deposit, as also whether a fatty state of liver might be produced by the administration of cod-liver oil.

DR. LEVICK did not understand how this could occur, as a fatty degeneration was always accompanied by a lowering of the system or part involved, which cod-liver oil would be more likely to remedy.

DR. DA COSTA remarked, that to tell whether oil-globules in the liver, deposited as they are in the secreting cells, were the result of a deposit or fatty degeneration, would be impossible. With regard to the fistula in the gall-bladder in the specimen before them, he pointed to the fact that in nearly all the reported cases of fistula of the gall-bladder, numerous gall-stones, and generally large ones, had been found, and these were probably the cause of the perforation.

Dr. Mitchell stated that the gall-stones in this case consisted mainly of cholesterine.

Dr. Gross remarked that some time since he had attended a female from whom a number of gall-stones escaped externally. The fistulous opening was five inches from the median line, on a level with the umbilicus. She recovered without any unfavorable symptoms. She had not been jaundiced, nor did she complain of pain when a gall-stone was passing.

Gangrene of the Bladder following over-distension.—Dr. Hall exhibited a specimen of gangrene of the bladder taken from a Frenchman aged thirty-six, a stout, heavily-built man, who was brought into the Pennsylvania Hospital at 4 o'clock, on Monday afternoon, the 31st September, in an extremely prostrated condition.

There was no note or history of the case from the physician who had been in attendance, but, in answer to a hurried inquiry, Dr. Hall was informed that the patient had not passed his water for the last thirty-six hours. An attempt to relieve him by the introduction of the catheter proved ineffectual. The following particulars were afterward ascertained:—

The man was an industrious journeyman in a perfumery factory. On Saturday night he had been seen to enter his lodging-room, and was not thought of again until Monday morning at the work-hour, when, not appearing as was his wont, the foreman went to look for him, and found him locked in, and apparently very ill. A physician who was sent for at 8 A.M. found the man complaining of pain in his lower belly. On asking him if he had passed his water lately, and receiving an answer in the affirmative, he thought no more of his bladder, but prescribed a carminative to relieve the pain complained of. When summoned again at 2 P.M., in haste, the man appeared to be partially delirious, but could answer questions when aroused. But when seen in the afternoon, there was a great change for the worse. The man was comatose, and in the same extremely prostrated state as noticed when brought to the hospital.

In a subsequent interview with his employer, Dr. Hall further stated, I learned that the man had been laboring under symptoms of stricture of the urethra for a considerable time previously.

There was nothing in his room to show that he had taken an opiate, or a poison of any kind.

At the time of his admission into the hospital, he was comatose with sighing respiration, an uncertain, frequent pulse, intermitting in its beats.

His face was angulated, his eyes sunken, the face, neck, and chest bathed with a cold sweat; his belly was exceedingly tympanitic. Local dullness well marked over the hypogastric region, extending as high as the umbilicus.

The only evidence of sensation evinced by the patient was a slight impatient grunt, or rather growl, when any pressure was made upon the distended abdomen.

A temporary improvement seemed to follow his being placed in a hot bath. His pulse went down to 85 or 90, and became more developed. The surface showed by its coloration that it responded to the heat stimulus, and we thought that he could hear when we shouted close in his ears, but he gave no other evidence of sensation save an impatient plunge or two when an electric current was passed through the præcordium.

While in the bath he passed an inconsiderable quantity of urine, tinged with blood, which caused a slight diminution of percussion-dullness over the bladder.

Another attempt by Dr. Morton and myself to introduce a catheter failed.

By persevering attempts he was made to swallow stimulants. Still the coma remained as before, and the patient gradually sank into a stupor. He died at midnight.

Autopsy ten hours after death.—Head, nothing abnormal. Lungs, healthy. Liver, kidneys, spleen, ditto. There were some slate-colored patches on the peritoneum, in the hypogastric region, but there were no traces of recent peritonitis. Bladder very much dilated, and filled with decomposed, intensely alkaline urine, mixed with blood of a brown color. The fluid gave out a most pungent ammoniacal odor, and stung my fingers quite sharply in some places where there were abrasions. From the urine was deposited a soft, mealy sediment upon the posterior wall of the bladder. There were a few flakes of lymph floating about in the fluid.

The mucous membrane of the viscus was of an intensely dark-red color, more soft and spongy in its texture than normal, and covered with numerous enlarged capillaries filled with blood, ramifying all over its surface.

In the centre of one of the walls of the viscus were several striated eschars, and around these small depressions the membrane was of a greenish gray or bronzed color; interspersed with these, and illustrating beautifully the transition-stages of inflammation, were maculæ of ecchymosed blood, poured out from the over-burdened vessels. The muscular coat of the bladder also appeared to be hypertrophied.

The primary cause of the retention of urine in this case, and the obstacle to the introduction of the catheter, was seen to be a tight stricture just at the commencement of the membranous urethra. Behind the seat of stricture the membranous portion of the canal was dilated. The immediate cause of death was a spasmodic constriction of the urethra at the part already nearly closed, produced perhaps by a debauch. This brought on the retention, and the fatal issue.

Dr. Stillé did not think that the symptoms corresponded very closely with the lesions. They were certainly not such as might be expected in a case of gangrene of the bladder.

Dr. Gross remarked that the period of retention of urine was very short. He believed it possible that the patient may have suffered from retention prior to the time it was discovered. Lymph, he stated, effused from an inflamed bladder, might assume a greenish or dark color simply by coming in contact with the urine, and this appearance might simulate gangrene.

Dr. Hartshorne commented on the rarity of death from distension of the bladder.

Encephaloid Tumor of the Thigh.—Dr. Woodward exhibited a specimen of soft medullary carcinoma from the back of the right thigh, just above the popliteal region. A similar tumor had been removed from the same patient last June, but the morbid condition had been rapidly reproduced.

The mass was a little larger than a man's fist, soft and brain-like, and consisted almost exclusively of elongated, oval, oblong, or irregular nuclei, varying from 1-6000 to 1-2000 of an inch in diameter. Intermingled with these were a few cells containing similar nuclei, and presenting the ordinary appearances of the cancer-cells. The nuclei were thick-walled, granular, without distinguishable nucleoli, and presented no reaction with dilute acetic acid.

A moderately firm tunic of connective and elastic tissue, imbedded in which were many of the above-described nuclei, invested the tumor.

Primary Cancer of the Pancreas.—Dr. Da Costa called the attention of the Society to a specimen of primary cancer of the pancreas. The case had been successively under the care of Drs. Mitchell and J. F. Meigs, and it was from them ascertained that the patient, a man forty-five years of age, by occupation a servant, had commenced last spring to complain of symptoms of indigestion, which yielded, however, to a great extent, to astringents and tonics. A more troublesome symptom was jaundice. Uninfluenced by medicines, it increased until the man's eyes and skin became of a most intensely yellow color. No external swelling over the liver, or in its vicinity, was perceptible. The liver seemed somewhat enlarged, and palpation showed its lower border to be rather hard, and not as smooth as is usual. Slight pain across epigastrium. About the middle of September the man presented the following symptoms: He was deeply jaundiced, had passed a blackish-yellow urine, containing bile. Bowels somewhat constipated; stools clay-colored, not observed to be fatty. Pain across epigastrium and hypochondrium, extending to back. Slight if any symptoms of indigestion. Occasional vomiting. He had emaciated somewhat, yet by no means strikingly so. His spirits were good. No ascites or anascara. No local tumor perceptible in the abdomen.

He continued in this state until the 12th of October, when he was suddenly seized with an attack of hemorrhage from the lung, which lasted for several days. The blood was red and frothy, mixed with saliva; was spat up in considerable quantity, and mostly after efforts of coughing. The attack weakened him extremely. He died ten days after its commencement, so that the immediate cause of his death was pulmonary hemorrhage.

Post-mortem examination.—Skin and cellular tissues extremely yellow. Head not examined. Lungs healthy; the seat of the hemorrhage could not be found; the lower lobes were enlarged; some yellowish serum effused in pleural cavities, especially on the left side. Heart normal. On opening abdomen no fluid. Stomach normal; here and there its mucous coat seemed thicker than usual. Spleen of normal size. Liver enlarged and dense; a few, but only very few, small hard whitish masses scattered throughout its structure. In parts the liver-structure on the surface seemed slightly granular, as if in the earlier stages of cirrhosis. The color of the liver was green and mottled, some parts being very dark, inclosing others of a lighter hue. No blood transuded at any portion from the sections made. Microscopically examined the dark spots just alluded to consisted of irregular and large pigment masses. A few of the hepatic cells were filled with pigment granules, but not many; on the whole they were perfectly healthy, and fully capable of performing their functions. The fibrous tissue in the liver was not increased. The few hard white masses showed distinct cancerous elements. Gall-bladder fully distended with a thick inky bile, a few gall-stones; cystic duct dilated; hepatic duct and the common choledoch duct much compressed by a large irregular hard mass which extended across the median line backward, and proved to be, on closer examination, the head of the pancreas. Intestines healthy; so the mesentery. Pancreas firm and enlarged; its head and a few of the surrounding glands converted into a hard tumor nearly the size of a man's fist; its left extremity also somewhat harder than normal; in the middle the gland seemed of a lighter color. Pancreatic duct pervious; it ran through the base of the tumor and emptied itself into the duodenum.

A microscopical examination of the affected organ proved the hard mass to be a scirrhous tumor. It contained a large quantity of fibrous tissue, and distinct nucleated cells, some with several, others with only one large nucleus, of a round or oval shape. Some of these nuclei were free. The cells were like those met with in marked cancerous tumors. In the portion of the pancreas next to the diseased head a great deal of fat, in the shape of granules and oil-drops, was perceived; no structure, however, like that at its head; nor could gland-cells be discerned. At the splenic extremity of the pancreas gland-cells were observed, with only a trifling amount of fat, also fibrous tissue, but none of the cells or of the structure perceived at the diseased part. This portion was, therefore, although somewhat denser, not cancerous; the middle portion was in a state of fatty degeneration; the head cancerous.

DR. DA COSTA then spoke of the fact that cancer of the pancreas seemed most usually to select the head of the organ as its seat. A further report on this, as well as on the prominent symptoms of similar cases, was asked for by the Society.

DR. MOREHOUSE alluded to the hemorrhage in this case as interesting. He had seen several cases of internal cancer, with hemorrhage from the lungs occurring as the disease advanced, without the lungs being affected.

DR. HEWSON mentioned a case in which the appearance of malignant disease had been preceded by frequent attacks of hæmoptysis, without any physical signs of pulmonary disease being present.

DR. STILLÉ inquired particularly into the hemorrhage in the case just read. Might it not have been from the stomach?

DR. DA COSTA thought not. The blood was red, frothy, and voided after slight efforts of coughing.

Bony Tumor of the Scrotum.—DR. RICHARDSON exhibited for DR. KERR a bony tumor of the scrotum, taken from a Chinese. The mass closely resembled the two upper maxillary bones placed in apposition. In some portions it was not very firm, but in others as hard as any osseous tissue. A minute examination proved it to contain bone corpuscles.*

WEDNESDAY EVENING, Nov. 11th, 1857.

The President, DR. GROSS, and afterwards Vice-President STILLÉ, in the chair.

DR. KEATING submitted some heart-clots to the Society, which had been obtained from a man, aged sixty-three years, who was admitted at St. Joseph's Hospital in a decidedly typhoid state, and presented signs of consolidation of the right lung. The *post-mortem* examination showed in the right ventricle a firm whitish clot, of considerable size, involving the tricuspid valve, and quite closing up the mouth of the pulmonary artery: on the left a considerable clot existed, apparently obstructing the aortic opening. Dr. K. believed the clots to have been formed before death, and suggested that they might have preceded, and tended to cause the pneumonia. He spoke of the rarity of clots on the right side of the heart.

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* This case will be found fully reported at page 79.

DR. STILLÉ remarked that many years ago he had seen a case of consolidation of both lungs, in which sudden shortness of breath was followed by signs of cardiac disturbance. About thirty hours after the commencement of the symptoms the patient died. A large clot was found in the right side of the heart invested by a distinct serous-like membrane, delicate but firm. He thought that the clot was formed originally by the rapid movement of the valvular apparatus of the heart through the highly fibrinous blood.

DR. DA COSTA alluded to a case, attended by a medical friend, where, after a blowing sound had existed for some time in the heart, it suddenly disappeared, and the left lung became dull on percussion. Dr. Da Costa has had an opportunity of seeing, at intervals, this case for the last three years. The physical signs of consolidated tissue still exist.

A discussion on heart-clots and the signs of their organization ensued, in which Drs. Richardson, Gross, Levick, Keating, and Woodward participated.

Cancer of the Liver, and other Abdominal Viscera.—DR. KEATING exhibited several cancerous organs removed from the body of a man, aged forty years, a stone-mason by trade, who was admitted into the medical ward of St. Joseph's Hospital on the 13th of October, 1857. He complained then of loss of appetite, a constant dull pain in the lower part of the back, and general debility. He had been bedridden with the above symptoms during the previous three months; had not been subjected to any special treatment, but had applied to a physician for advice on account of costiveness, and was ordered to take a blue pill every night.

Upon entering the hospital his aspect was so strikingly peculiar as to attract attention, and together with the constant pain in the back, extreme emaciation, and other nephritic symptoms, to cause suspicion to rest upon the kidneys as the probable seat of the morbid process under which his system appeared to be so rapidly wasting.

Upon inquiring into the state of his urinary organs his urine was found to be scanty, quite high colored, and decidedly acid. Though carefully and repeatedly subjected to the ordinary tests for the presence of albumen, nothing more than a mere trace could be discovered. The test by the sulphate of copper also failed to give the characteristic precipitate indicating the presence of saccharine matter. His stools, at first dark and of a watery consistence, soon became of a clay color, showing that the liver did not perform its function properly; and also at the same time a tympanitic state of the abdomen was observed.

During his course of medication, a tonic and diuretic plan of treatment were tried, until within a week prior to his death, when the diarrhœa returning, and the character of the stools exciting suspicion that there might be ulceration of the bowels, the oil of turpentine, together with the tincture of opium in emulsion, was ordered, under which treatment he appeared to be improving; but during the night of the 4th inst. he complained for the first time of severe pain in the epigastric region, became delirious, and died about 7 A.M. the next day.

Upon making a *post-mortem* examination of this interesting case there was found ulceration of the intestines, together with perforation of the duodenum. The pancreas and mesenteric glands were greatly enlarged, and appeared to be completely transformed into a hard mass. Some, when cut into, allowed a whitish fluid to transude.

The concretions also extended along either side of the spinal column, from the lumbar region even up as high as the fifth dorsal vertebra. This diseased state had also slightly involved the right kidney, while the liver presented a peculiarly mottled appearance, and was filled with large, hard nodules. A mass of fibrine was found in the right ventricle of the heart, and masses like miliary tubercle could be distinctly felt, as well as seen, by cutting into the structure of the left lung.

Examined microscopically by DR. DA COSTA.—In the liver all the white spots were cancerous; they yielded a fluid on pressure, which contained large nuclei, with nucleoli, and a considerable amount of granules and oil-drops. In the harder portions many very distinct cells, with many nuclei, as also free nuclei, and a few oil-globules were present; no fibrous structure; epithelial cells, unaltered, in intervening parts. Mesenteric glands—nuclei, and small cells, much fat, and cells filled with oil-globules, obscuring nuclei; many granules, which abounded in soft portions. Clot in heart, fibrine, granular, and small cells nothing resembling cancerous formation. Lungs not examined.

In answer to a question of Dr. Stillé, whether the glands in the intestine were healthy, Dr. Keating replied that they were.

DR. WOODWARD stated that he had examined the miliary formations in the lung, and believed them to be tubercular.

They consisted microscopically of a transparent amorphous substance, in which were imbedded a few granules and a number of shrivelled, more or less angular, and collapsed nuclei.

A discussion arose as to the coexistence of cancer and tubercle. Several cases were mentioned by different members of the Society.

Softening of the Stomach.—DR. GROSS exhibited a specimen of softening of the stomach by the action of the gastric juice. A boy, aged two years and a half, from whom, in June last, he extirpated the left eye on account of encephaloid, died on the 24th of October, from a relapse of that disease, in a state of great emaciation and anæmia.

Post-mortem twenty-eight hours after death.—The stomach was found to be nearly filled with weak coffee, of which the child had taken large quantities for some time past, as his almost exclusive sustenance. In handling the great cul-de-sac, the organ gave way at that point with a large rent, in consequence of the softening of its tunics from the action of its contents. The mucous membrane presented a gelatinous appearance, and the muscular fibres in the parts immediately around looked preternaturally pale, and were easily torn. The rest of the organ seemed to be healthy. Contents of stomach did not exhale any acid odor. A piece of small bowel, carefully cleaned and retained in contact by its mucous surface with the cul-de-sac of the organ for three days, did not appear to have undergone any material changes in its color or consistence.

Fungus of the Testicle.—DR. GROSS exhibited a fungus of the testicle, with fibroid degeneration of its tubular structure.

A. W. D., aged twenty-nine, of Montgomery County, Pa., nine years ago had a chancre and bubo, which continued two months. Four years after this he contracted another chancre on the head of the penis, which was cured in three weeks, but was followed by copper-colored scaly eruption of the integuments, by rheumatism, and nodes on the arm and tibia. Three years ago the right testicle became enlarged, hard, and painful, and four months ago a small pimple appeared on the right side of the scrotum, which gradually extended into an open sore, giving rise to a large fungus formation. This soon became the seat of an offensive, ill-looking, and profuse discharge. The organ, being almost completely degenerated, was removed a fortnight since. The wound is at present in a healing condition. There is still a slight eruption on the face, and an ulcer on the left tibia. The left testicle is also partly enlarged, but much less than the right On dissection, the affected organ was found to be almost completely deprived of its natural structure, the tubular matter being replaced by a fibroid tissue of a pale yellowish color and firm consistence. At the posterior part of the epididymis was an abscess about the volume of a small hickory-nut, occupied by a tough, yellowish, cheesy-looking substance, having a close resemblance to tubercular deposit. Dr. Gross alluded to a case of a similar kind which occurred in his practice a year ago, where the testicle had undergone the same fibroid degeneration. The man had labored for a long time under tertiary syphilis, and a large fungus existed upon the scrotum.

Obscure Injury of the Shoulder-joint.—DR. KEATING next exhibited a specimen of an obscure affection of the shoulder-joint. The patient, a man aged thirty-two, had died of phthisis. Eight months before his death he fell down a flight of stairs and injured his shoulder. He was treated for fracture. When first seen the arm was lengthened, and had the appearance of being dislocated.

On the head of the humerus, near its lower border, the cartilage was entirely absent in two spots. The bone at these points was hard and smooth. An irregular groove passed across the glenoid cavity of the scapula. The head of the humerus had evidently rested at these bare spots on the lower edge of this groove in the glenoid cavity.

DR. GROSS considered it a case of partial absorption of the cartilage of the head of the humerus and glenoid cavity. He did not see any evidence of fracture. It was simply a removal of the cartilage, and irregularity of the bone.

DR. HEWSON remarked that Dr. Robert Adams, of Dublin, had shown him specimens of chronic rheumatic arthritis, which closely resembled that on the table.

DR. HARTSHORNE spoke at some length about the fractures of the head of the humerus and of the glenoid cavity. He did not wish to say that this was a fracture, yet it had the appearance of one. A committee, consisting of Drs. Hartshorne, Gross, and Hewson, were appointed to examine into the exact nature of the specimen presented.

Ovary containing Bone.—DR. WOODWARD exhibited some pieces of bone from a large ovarian cyst. The ovary in this case contained an extensive deposit of encephaloid, and the cysts contained also hair and fat.

American Progress of Medical Science.

REPORT ON THE PROGRESS OF PHYSIOLOGY AND ANATOMY.

By S. WEIR MITCHELL, M.D. Lecturer upon Physiology in the Philadelphia Association for Medical Instruction; Member of the College of Physicians of Philadelphia, etc.

IT is proposed in future to present, once a year, to the readers of this journal, a complete analytic review of the general progress of Physiology and Anatomy. At the same time, and as an essential part of this task, we shall endeavor to point out with care whatever advances in these sciences are due to the annually increasing labors of our own countrymen. As a considerable share of the recent European additions to physiology has already been presented during the past year to our readers, we have decided on the present occasion to replace the report, thus rendered for the most part unnecessary, by a statement of the progress of physiology and anatomy in this country. Such a review as we contemplate ought not to lack of interest as a medical and literary record, while, at the same time, we indulge the additional hope that it may be of some use to the profession to ascertain, in this direction, how much or how little we, as a nation, have done for the world of science. With this view, we have analyzed and catalogued every physiological and anatomical essay which has appeared in the journals during the last ten years. We have also selected the best of the papers whose publication occurred previous to 1847, and have sought to arrange them in such a manner as to give to the list some value for purposes of future reference. It has been found quite impossible to collect the titles of the many pamphlets, etc., which have appeared from time to time. In most cases, this omission is of no moment, since such pamphlets are usually mere collections of essays originally made public in the journals. Even with this general limitation to the journal literature of our subject, the task has been no light one, and it is very possible, as the time allotted to us for its completion was but two months, that some essays may have escaped our notice. It is hoped, however, that our list is sufficiently complete to be useful, and that, as a record of how little has been done in past years, and how much more has been done within a recent period, we may find in it a lesson, and the promise of a more hopeful future.

While thus admitting a sense of disappointment at the general result of our inquiry, we have no wish to teach that our countrymen have done nothing for physiology and anatomy. Here and there, in the files of journals through which we have looked, are to be found essays of the utmost value, and often of an excellence quite unapproached in the special subjects of which they treat. Some of these papers are models of the kinds of research which they exemplify, and are to this day of standard authority. It will also be observed, as we progress, that some important physiological subjects have been with us altogether neglected, while others have received an unusual share of attention, either because they involved the interests of races, or because some special circumstances enabled the experimenter to resort to means not elsewhere available. The first of these causes has given us a series of papers upon the anatomical and physiological pecularities of the African, as well as his mortality, fecundity, etc.—questions in which we are largely interested as a nation, and which have obtained illustration, directly or indirectly, from the pens of Morton, Bachman, Cartwright, Dowler, etc. Special advantages of position, and indeed the very necessities of early burial during epidemics in warm climates, have given to Dr. Dowler the opportunity of numerous well-known researches upon capillary forces, post-mortem heat, and post-mortem muscular contractions, etc.; we have thence acquired many facts which might have been long in coming to light had it not been for the New Orleans custom of making post-mortem examinations almost as soon as death has seized upon the frame. On the other hand, no one can read our journals without being struck with the number of theorizing papers, parading long lists of facts derived from the pages of other writers, without an effort to add one new, or freshly invented experimental illustration.

This eager love of appearing in print at all hazards, finds also profuse self-indulgence in dreary controversial papers, which are only too common in some of our journals, and of whose multitudinous dullness no luckless bibliographer has as yet taken the census. Any one who doubts on this point, and who is even remotely open to conviction, is desired to read, in the first place, a lady physiologist, Mrs. Emma Willard, upon "Respiration as *the* Motive Power of the Circulation of the Blood." Few, we fancy, could discover in this good lady's views anything worthy either of refutation or remembrance; but for some reason her supposed discovery excites a buz of mingled admiration and mockery, whose "mortal result" is to be found in eighteen papers, pro and con, which adorn the pages of a northern and a southern journal. The name of the thing in dispute finally comes to be "Hæmatokinety," but the subject remains the same, as any adventurous reader may find to his cost, should he be inclined to this particular method of literary suicide.

Before the year 1856, Dr. Dunglison's well-known text-book was the only complete work upon physiology originally published in this country. It yet remains, after numerous editions, a favorite with the student, and the profession generally, being still remarkable for the fullness and distinctness of its statements, and for the valuable bibliographical references, which, in the form of foot-notes, add greatly to its use as a book of reference.* Within the last year the admirable work of Professor Draper, on Human Physiology, has been given to the professional public. As a whole, this work is worthy of its author's fame. We might point to some portions, such as the chapter upon the functions of the various parts of the inner ear, as being rather loosely reasoned; yet throughout it is remarkable for originality of view and freshness of expression, and is altogether more interesting as a book than is at all common with scientific text-books.

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* The sale of Dr. Dunglison's medical works is almost unprecedented in the history of medical literature. Several years ago it was stated by Mr. Carey, in an essay on International Copyright, to have reached to 80,000 volumes, and at present it can be stated with greater correctness as extending to at least 95,000 volumes.

The older and smaller treatises compiled in this country, such, for example, as those of Oliver and Coates, have long passed out of use, and need claim no further notice. The American works on Human Anatomy, such as those of Wistar, Horner, Morton, and Richardson, are, on the other hand, too well known to require comment, and we shall therefore pass on to the divisions of our subject with but little additional preface.

It will, no doubt, strike the reader as singular, that the two great physiological text-books above named should be here quoted as of American origin. Both the authors, however, have long been residents of this country, although both, like Professor Blake, are of foreign birth. Both of them, also, we believe, consider themselves as ours by adoption, as, without doubt, they are by every other tie of respect and well-merited esteem. Mr. Brown-Séquard has himself claimed the rights of scientific citizenship, if we may so speak, upon the grounds of affection—of intended residence, and of birth. We do not see how we are to throw out such a claim, or, indeed, why we should wish to do so, although his scientific abilities owe their primary training to the land whose language he speaks, and where he so long resided.

With this preface, we propose to review, in turn, each physiological function, and finally to speak of anatomy, briefly indicating what has been done for each upon this side of the ocean, and referring to the principal essays upon the topics of which we are writing.

1. *The Nervous System.*—If, as we have said, and as he himself wishes, we claim Mr. Brown-Séquard as an American writer, the best papers upon the physiology of the nervous system are undoubtedly to be attributed to him. These essays illustrate physiologically the causes of epilepsy, and treat with equal success and originality of the track of sensations in the spinal column. We have not thought it requisite to note the journals in which most of these papers occur, because they have been since partly collected into a small volume in this country, and are set forth most fully in an able report to be found in the *Comptes Rendus* of the Société de Biologie, Paris, 1855. Next to the distinguished physiologist last mentioned, the best-known native writer is, beyond doubt, Dr. Bennett Dowler, of New Orleans. Of his researches upon other functions we shall have frequent occasion to speak as we proceed. His views in regard to the nervous system are so utterly opposed to the commonly received canons of physiology as to make it worth while, at least, to remind the reader of the researches, or rather experiments which placed Dr. Dowler in his present antagonistic position. Dr. Dowler rejects the idea of the centralization in the brain of volition and sensation, and believes in the possibility of volition apart from the brain, as well as in the existence of a diffused sensorium. The experiments upon which these views are based were made chiefly upon alligators, in whom Dr. Dowler believed himself able to recognize the existence of voluntary motion and sensation after the animal employed had

been decapitated, pithed, and eviscerated. These experiments have been variously interpreted, according as they who reasoned upon them were or were not believers in the possible existence of combined and associated reflex movements. In either view the experiments are of remarkable interest, and this is in no way lessened by the singular and vivacious mode in which Dr. Dowler relates his results.

Up to the present year we have but few original essays of value to add to our list of researches upon this part of physiology. Among these, however, are Dr. Clay Wallace's essays on the physiology, etc., of the nervous system of the eye. Two papers—the one old, 1838, the other recent—upon the functions of the cerebellum. Dr. M. Michel on the Cerebro-Spinal Fluid, etc. Dr. Campbell's recent essay on the excito-secretory system of nerves, will be considered more fully at the close of our report. Besides these essays, there are also on our index-book some thirty additional papers, which, as a general rule, it is quite unnecessary to name, much less to analyze.

Brown-Séquard.—Researches on Epilepsy: Its Artificial Production in Animals, etc.; Boston Med. & Surg. Jour. from Nov. 1856, to Nov. 1857. Republished by D. Clapp, Boston, 1857.

Brown-Séquard.—Phys. & Pathol. Researches, 1855, Philadelphia; also Med. Ex., 1852–53.

Bennett Dowler.—Nervous Systems, etc.; New Orleans Med. & Surg. Jour., vol. iv. pp. 189–279.—Nervous Action, etc. etc.; New Orleans Med. & Surg. Jour., vol. viii. p. 37.

N. S. Davis.—The Cerebellum not Connected with Sexual Instinct; Trans. Am. Med. Assoc., vol. iii. p. 22.

I. D. Fisher.—On Cerebellum—Cases of Atrophy of, Coexistent with Sexual Defects; Med. & Phys. Jour., 1838–39, vol. xxiii. p. 352.

Clay Wallace.—Nervous System of the Eye; Boston Med. & Surg. Jour., vol. xxxviii. pp. 169, 189, 208, 280.

M. Michel.—Cerebro-Spinal Fluid; Charleston Med. Jour. & Review, vol. iii. p. 371.

H. F. Campbell.—Excito-Secretory System of Nerves; Prize Essay; Trans. Am. Med. Assoc., vol. x. p. 465, 1857.

H. F. Campbell.—The Sympathetic Nerve in Reflex Phenomena; Trans. Am. Med. Assoc., vol. vi. p. 539, 1853.

John Harrison.—Sensations and the Relation between Nervous Matter and the Objects of Impressions; New Orleans Med. & Surg. Jour., vol. vi. pp. 425, 697.

Bennett Dowler.—Physiology of Subjectivity; New Orleans Med. & Surg. Jour. New Series, vol. viii. p. 64.

Special Senses.—Dr. C. Wallace's papers upon the anatomy and physiology of the eye have just been alluded to; his description, etc. of the anatomy and physiological function of the ciliary muscle is still better known, and is to be found in a little volume published in 1852. Dr. Wallace also wrote a small volume on the structure of the eye, with reference to natural theology. Amid seventeen papers upon the special senses, by various authors, we have found but few of interest to any one beyond their writers. Dr. Draper's text-book contains chapters upon the eye and ear, which are remarkable for bold application of recently acquired physical facts to the explanation of ocular and auditory phenomena. We would especially call attention to the chapter upon the eye. Dr. Draper's view of the functions of the inner ear differs greatly from that of Dr. S. Jackson, who has also written thereon with great ingenuity, and who regards the semicircular canals as forming an apparatus for producing interference of the waves of sound, and so preventing the occurrence of confusing echoes in the ear. Dr. Draper assigns this office to the two scalæ of the cochlea, and advocates this view with his usual skill. Professor Alexander contributes to our list an abstract of his researches upon the analogies of touch and sight, which would very well bear extension into a paper of greater completeness. Drs. Loomis, Lovering, Hilgard, Hallinan, Campbell, W. W. Clark, Leaming, and F. Michel have also written upon various points connected chiefly with the sense of sight.

W. C. Wallace.—Accommodation of the Eye to Distances, 8vo, 1850.

W. C. Wallace.—Contributions to the Physiology and Pathology of the Nervous System of the Eye; Boston Med. & Surg. Jour., vol. xxxviii. pp. 169, 189, 208, 280.

J. B. Hallinan.—Adjustment of the Eye to Distances; Boston Med. & Surg. Jour., vol. xlix. p. 324, 1854.

R. F. Michel.—Ciliary Processes, Uses of; Am. Jour. Med. Science, 1847, vol. xiv. p. 393.

Hilgard.—Contributions to the Physiology of Sight; Trans. Am. Assoc. Adv. of Sci., 1855, p. 251.

S. Jackson.—Functions of the Parts of the Inner Ear; Am. Jour. Med. Sci., vol. xxxi. p. 550, 1856.

E. Loomis.—On Optical Moving Figures; Trans. Am. Assoc. Adv. Sci., 1851, p. 293. Also on Curious Phenomena of Sight, *Professor Lovering;* Trans. Am. Assoc. Adv. Sci., 1849, p. 369.

F. Leaming.—Foramen of Soemmering, Uses of; Am. Jour. Med. Sci., vol. xxx. p. 80.

Alexander.—Special Analogies of Sight to Touch; Trans. Am. Assoc. Adv.Sci., 1852, p. 365.

W. W. Clark.—Relation between Erect Vision and the Inverted Image on the Retina; New York Jour. Med., 1852, p. 366.

R. D. Mussey.—Experiments on a Case of Congenital Absence of the Auditory Meatus in both Ears; Am. Jour. Med. Sci., Feb. 1838, p. 378.

2. *Digestion and Absorption.*—Since an accident, and the fortunate labors of Beaumont conferred physiological immortality upon Alexis St. Martin, we have done almost literally nothing additional in the study of the digestive functions. Excepting, therefore, two very excellent essays by Dr. J. C. Dalton, on certain points in digestion, and two valuable papers by Dr. F. G. Smith, relating experiments recently made by himself upon St. Martin, the journals are barren of original views on this subject. A paper by Dr. J. Jones upon the digestion of albumen, etc., and containing accounts of examinations of the stomachs of many animals, should, however, be also mentioned, since it contains observations upon the contents of the stomachs of animals, of a kind which few physiologists are so situated as to be able to make. This essay has since been incorpo-

rated into Dr. J. Jones's "Smithsonian Contributions to Useful Knowledge." Of one or two other essays which belong to the past year, we shall presently speak more at length.

Our medical literature contains but little that is novel upon the subject of absorption. The older essays upon the phenomena of osmotic currents in fluids and gases, are by far the best, and have long since been recognized as authority in the matters of which they treat. More recently, Drs. G. W. Jones and J. Jones have also furnished each a paper upon the osmosis of saline solutions. Drs. Pennock and Blake appear upon our list as the authors of papers upon the absorption of poisons; and among the yet older essays are the reports of Drs. Lawrence, Coates, and Harlan, upon the subject of venous and lymphatic absorption. As far back as the year 1822, we have found a very excellent paper by Dr. Milnor, upon nutritive enemata. It contains many good experiments, and observations long since forgotten; and we regret that our space does not allow us to analyze its contents more completely.

William Beaumont.—Physiology of Digestion, with Experiments on the Gastric Juice, 12mo.

J. K. Mitchell.—On Penetrativeness of Fluids and Gases; Am. Jour. Med. Sci., 1830–31, vol. vii. p. 36; 1833–34, vol. xiii. p. 100.

Dr. Togno.—Endosmosis, etc.; Med. & Phys. Jour., 1829, vol. iv. p. 73.

R. E. Rogers.—Experiments on the Blood—Endosmosis of Gases, etc.; Am. Jour. Med. Sci., 1836, vol. xviii. p. 277. *Faust.*—Endosmosis & Exosm. of Gases, 1830; Am. Jour. Med. Sci., vol. vii. p. 23.

Drs. Harlan, Lawrence, and Coates, 1821.—Report to the Academy of Medicine upon Absorption. Also *Harlan* —Physical Researches; and *Lawrence* and *Coates*, Med. & Phys. Jour., vols. v. and vi. p. 327.

J. W. Draper.—On Endosmosis and Exosmosis; Am. Jour. Med. Sci., August, 1836, p. 276; also Nov. 1837, p. 122; May, 1838, p. 23; Aug. 1838, p. 302.

Dr. Milnor.—Experiments and Observations upon Medical and Nutritive Enemata; Med. & Phys. Jour., 1821–22, vols. iii. and iv. p. 10.

Jas. Moultrie.—Function of the Lymphatics; Am. Jour. Med. Sci., 1827, vol. i. p. 344, New Series.

G. W. Jones.—Endosmosis and Exosmosis as connected with the Action of Purgatives, 1848; Am. Jour. Med. Sci., vol. xv. p. 308.

J. Jones.—Exosmosis, etc. of Saline Solutions of Different Densities.—Action of Salines in Living Animals and through Dead Membranes, etc., 1856; Am. Jour. Med. Sci., vol. xxxi. p. 61.

J. C. Dalton.—(Digestion.)—Decomposition of Iodide of Starch by the Animal Fluids; Am. Jour. Med. Sci., 1856, vol. xxxi. p. 326.

J. C. Dalton.—Digestion of Starch; Am. Jour. Med. Sci., vol. xxxii. p. 555.

F. G. Smith.—Experiments on Digestion, Gastric Juice, etc.; Med. Ex., 1856, vol. xii. p. 385.

F. G. Smith.—Experiments, etc. on Digestion of Starch in Stomach; N. Am. Med. Chirur. Rev., 1857, vol. i. p. 598.

J. Jones.—Digestion of Albumen and Flesh, and the Comparative Anatomy and Physiology of the Pancreas; Med. Ex., 1856, vol. xii. p. 257.

Harlan.—Physical Researches, Phila. 1835

J. B. Stuart.—Absorption by the Skin; New York Med. Rep., vols. i. and iii., 1810–11.

R. D. Mussey.—Phila. Med. & Phys. Jour., vol. i. p. 288.

Dr. Rousseau.—Experimental Dissertation on Absorption; Phila. 1800.

J. J. Allison.—On the Lymph Hearts of Animals. (A very excellent paper.) Am. Jour. Med. Sci., 1838, vol. xxii. p. 377.

3. *Circulation.*—Here, as we have observed in our prefatory remarks, the papers upon Mrs. Emma Willard's theory reign supreme as to number. Since, however, the profession is pretty well agreed upon the subject of "the respiration as the motive power of the blood," we shall not venture to deal further with the matter, believing, on the whole, that a lady's "motive" is not to be ungallantly scrutinized. The action of the great central propulsive organ, and the causes of its sounds, was made the subject of original inquiry by Dr. Pennock, whose results are chiefly embodied in his edition of "*Hope on the Heart.*" Dr. Pennock has also contributed a useful paper upon the pulse of the aged, showing that the pulse becomes more rapid in the old. Dr. Pennock's views upon this subject are now generally received, but, at the time of the publication of his paper, the profession was singularly fixed in the belief that the pulse of the old was slower than that of the middle-aged adult. It scarcely comes within our range to speak of essays upon the pulse of disease, but we are unwilling to pass by in silence the papers of Drs. Flint and Hooker, both of whom have incidentally illustrated the physiology of the pulse while studying its pathological phenomena. The experiments of Dr. Dowler upon the capillary circulation in man are among the most interesting of which we shall have to speak in this connection. During the prevalence of epidemic fevers in summer in New Orleans, it appears to be the custom to make the *sectio cadaveris* within a very short time after death has occurred. Taking advantage of this, Dr. Dowler made many experiments upon the capillary circulation while the blood was still fluid. Grateful as we are for these researches, it is difficult to accustom oneself to the idea of *post-mortem* examinations where life is absent but an hour or two, or even less, and where the blood flows and the muscles contract as the knife of the dissector divides them.* Dr. Dowler's essays, as well as the older papers of Dr. Draper, upon nutritive attraction, deal principally with the subject of the motive forces which act upon the blood in the capillaries. Dr. Austin Flint, Jr., has also written upon the question of independent capillary forces as aids to circulation, and Dr. Camman has furnished a brief paper upon the peculiarities of the pulmonary capillary circulation. Finally, in a recent prize essay, Dr. H. Hartshorne has brought together almost every important opinion upon the subject of the pulse, etc., and endeavored to show, by reference to the experiments of former observers, that the muscular coats of the arteries by their own rythmical contractions aid the heart in producing the pulse.

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* These essays contain, among other matters, Dr. Dowler's account of the extraordinary *post-mortem* gymnastics of an alligator's dissevered head. Singular as the account may be, and most of our readers will remember the surprise it created, the allegations of the New Orleans Physiologist should command that belief which a positive statement, endorsed by many witnesses, is certainly entitled to.

Among the older essays we have also to note a paper by J. J. Allison, upon the existence of a venous pulse in the veins of many inferior animals. This paper is well illustrated, and is in every particular worthy of notice.

J. W. Draper.—Chemical Organization of Plants: A Treatise on the Forces which Produce the Chemical Organization of Plants, 4to.

The papers for and against the "Theory" of Mrs. Willard are to be found, by any who desire to read them, in the Boston Med. & Surg. Jour. and the New Orleans Med. & Surg. Jour. for the years 1851–54.

A. Flint, Jr.—Capillary Circulation—Phenomena of; Am. Jour. Med. Sci., 1857, vol. xxxiv. p. 13.

H. Hartshorne.—The Arterial Circulation: Its Physiology, etc.; Prize Essay of the Am. Med. Assoc., 1856.

B. Dowler.—Capillary Circulation, Experimental and Critical Researches upon; New Orleans Med. & Surg. Jour., 1849, vol. v. p. 446.

J. L. Riddell.—Observations upon the Capillary Circulation, Cilia, etc. etc.; New Orleans Med. & Surg. Jour., 1852, vol. ix. p. 173.

J. K. Mitchell.—Observations on the Pulsations of the Heart of the Sturgeon after death; Am. Jour. Med. Sci., vol. vii. p. 58.

R. Randolph.—Valve of Eustachius, Uses of; Am. Med. Jour. Med. Sci., 1851, vol. xxii. p. 96.

H. A. Ramsay.—Pulse of Negro Child, etc.; Boston, Med. & Surg. Jour., 1853, vol. xlviii. p. 396.

S. Weir Mitchell.—Relations of the Pulse to Conditions of Extreme Inspiration and Expiration; Am. Jour. Med. Sci., 1854, vol. xxvii. p. 387.

J. J. Allison.—A Venous Pulse Independent of the Heart and Nervous System; Am. Jour. Med. Sci., 1838–39, vol. xxiii. p. 306.

C. W. Pennock.—The Pulse of the Aged; Am. Jour. Med. Sci., July, 1847, vols. xiv. and xv. p. 68.

T. Robinson.—Experiments on the Heart of a Monstrous Fœtus; Am. Jour. Med. Sci., Feb. 1832–33, vol. ii. p. 346, New Series.

J. Wiltbank.—On the Heart-pulse after Death; Phila. Jour. of the Med. & Phys. Sci., 1824, vol. ix. p. 361.

C. W. Pennock, and *R. Moore.*—On the Heart's Action; Med. Ex., Nov. 2, 1839; and also Am. Med. Intel., Dec. 16, 1839.

Blake.—Mode of Estimating the Amount of the Blood; Med. Ex., 1849, p. 459.

John Harrison.—Review of Opinions upon the Causes of the Coagulation of the Blood, etc.; New Orleans Med. & Surg. Jour., 1847, vol. iv. p. 34.

Dr. Cammann.—Peculiarities of the Pulmonary Capillary Circulation; New York Jour. Med., Jan. 1848.

4. *Secretion, Respiration, etc.*—We have indicated below the titles of the only good papers upon these functions with which we are furnished by the journals of the last ten years. To Dr. Dalton we owe a short but clear essay upon the movements of the glottis during respiration. He believes its contraction and expansion to occur synchronously with the expiratory and inspiratory acts, and thinks that the death which follows section of the pneumogastrics is partly owing to a paralysis and consequent collapse of the lips of the glottic

opening. We ought also to refer to a brief paper by Dr. Draper, upon the action of the bronchial muscular fibres, as aiding in the diffusion of gases through the lungs.

We have already spoken of the few investigations of the gastric juice which we possess, and, we regret to add, that the physiology of the secretions generally has received but little attention on this side of the water. The report upon the lacteal secretion, made to the American Medical Association, is miserably meagre, and adds but little to our stock of information upon this important subject. Dr. Dalton's recent paper upon the bile we shall consider in our report upon the physiology of the past year. The secretion of the kidneys seems to have attracted a larger share of attention. The best American papers upon its ingredients and their relative proportions are of recent origin, scarcely one having been written before the year 1847. The well-known essays of Dr. Kane upon Kiesteine certainly antedated this period, but, with this exception, we have nothing to point to until we reach the contributions of Drs. Fricke, Hammond, and Draper. All of these gentlemen have experimented upon the relation of urea and uric acid to the retrograde metamorphosis of muscles, and, unfortunately, their results show the most singular diversity. Dr. Draper's paper is very well and carefully arranged, while the final experiments in Dr. Hammond's first essay are the most ingenious attempts to clear up the difficult matter they illustrate, with which we are acquainted. Dr. Hammond has further experimented upon the excretion of the phosphates, and the effects of tea, coffee, and intellectual labor upon the composition of the urine. Dr. J. Jones, of Savannah, whose name we have had frequent occasion to recall, has also furnished us with a series of analyses of the urine of animals, as well as with some very valuable tables of the relative weight of the kidneys and other organs, as compared with that of the whole body of the animal. As usual, we have referred below to other papers of lesser note, and we shall again have occasion to allude to a recent essay of Dr. Isaacs, on the Anatomy of the Renal Organs, as the best paper of this description which our medical literature has yet furnished.

E. K. Kane.—On Kiesteine; Am. Jour. Med. Sci., July, 1842, p. 37.

McPheeters and *Perry.*—On Kiesteine; Am. Med. Intel., March, 1841, p. 369. Also *S. T. Elliott,* in New York Med. Jour., etc., vol. i., Third Series.

J. C. Dalton.—On the Constitution and Physiology of the Bile; Am. Jour. Med. Sci., 1857, vol. xxxiv. p. 305.

J. C. Dalton.—Movements of Glottis in Respiration, 1854; Am. Jour. Med. Sci., vol. xxviii. p. 75.

J. Jones.—The Kidney and its Excretions, etc., 1855; Am. Jour. Med. Sci., vol. xxix. p. 295.

J. W. Draper.—On Respiration—Function of the Bronchial Muscular Fibres, 1852; Am. Jour. Med. Sci., vol. xxiii. p. 314.

N. S. Davis.—Secretion of Milk in Health and Disease, etc. etc.; Trans. Am. Med. Assoc., 1855, vol. viii. p. 535; also 1856, vol. ix. p. 415.

W. A. Hammond.—Relations between the Amounts of Urea and Uric Acid, 1855; Am. Jour. Med. Sci., vol. xxix. p. 119. Also Urological Contributions, 1856; Am. Jour. Med. Sci., vol. xxxi. p. 330.

W. A. Hammond.—Excretion of Phosphoric Acid by the Kidneys; N. A. Med.-Chir. Review, vol. i. p. 730.

G. T. Elliott.—Urine in Fœtal Life, 1857; Am. Jour. Med. Sci., vol. xxxiii. p. 555.

J. C. Draper.—Is Muscular Motion the Cause of the Production of Urea? 1856; New York Jour. Med., vol. xvi. p. 147, New Series.

C. E. Isaacs.—Structure and Physiology of the Kidney; Trans. New York Acad. Med., 1856, vol. i. p. 377; Also, On Functions of the Malpighian Bodies of the Kidney, Feb. 4, 1857, p. 437.

Booth and *Boyé.*—Action of Benzoic Acid on the Urine, etc.—Does not decrease the Uric Acid; Trans. Am. Phil. Soc., vol. ix. part ii., 1845.

5. *Nutrition, Growth, Metamorphosis, etc.*—The physiological history of the blood has received some attention at the hands of Dr. J. Jones, in the essay so frequently alluded to, and we are also indebted to various authors for observations upon its microscopical appearances.

In connection with the development, growth, and metamorphosis of tissues, we have but little to point to until the recent appearance of several papers by Hammond, and one by the younger Draper, to which we have already alluded. Previously to these, we have four papers upon cell-life, and allied subjects, by the late Dr. W. J. Burnett; they possess more value as reviewing and enforcing the views of others than from any marked or distinctive originality. Many observations on development, on the blood, on ova, and on other kindred matters, have been made by Dr. Riddell, of New Orleans. Dr. Riddell's papers are, however, usually composed of isolated observations, and are deficient in classification, and in that multiplied and careful observation of single facts which alone can give to such essays a permanent value. This is the more to be regretted, as we do not doubt that an efficient use of Dr. Riddell's known skill and ingenuity would give to our science some more useful proof of abilities as an observer, which are too well known to be left unemployed.

The essays upon the products of the retrograde metamorphosis of tissue, as just now hinted, have been already mentioned in speaking of the kidneys and their excretion; we shall, therefore, content ourselves with the mention of Dr. Hammond's examination of the physiological effects of tea, coffee, alcohol, and tobacco upon the amount of the several elements into which the decaying tissues are supposed to be resolved. Dr. Hammond's conclusions in regard to tea, coffee, and alcohol accord on the whole with those of the recent German observers. His observations upon the effects of smoking tobacco we believe to be original with him. They lead him to the following conclusions:—"That tobacco, when the food is sufficient to preserve the weight of the body, increases that weight, and when the food is not sufficient, and the body in consequence loses weight, tobacco restrains that loss." The value of such researches are of course dependent wholly on the accuracy of the observer and the efficiency of his precautions against fallacies. It ought certainly to be a comfort to the tobacco-consuming millions to know, that with the virtue of organic instinct they are practicing so curious an economy in tissue. Next in value to the papers just named, and like them, subject to the only true criticism on experiments, namely, their repetition in other hands, are the observations, etc. of Dr. Jones upon the effects of starvation, etc. upon cold and warm blooded animals.

R. D. Mussey.—Effects of Alcohol in Health and in Disease; Trans. Am. Med. Assoc., vol. viii. p. 573.

N. S. Davis.—Assimilation and Nutrition, 1851; North-West Med. & Surg. Jour., Sept. 1851.

W. J. Burnett.—Blood Corpuscle-Holding Cells, and their Relation to the Spleen; Trans. Am. Assoc. Adv. Sci., 1853, p. 224.

J. L. Riddell.—Histology of Red Blood; Trans. Am. Assoc. Adv. Sci., 1855, p. 239.

W. P. Hort.—On the Independent Vitality of the Blood, 1850; New Orleans Med. & Surg. Jour., vol. vi., p. 582; vol. vii. p. 1; vol. viii. p. 164.

J. Garrie.—Electrical Conditions of Arterial and Venous Blood, 1854; New Orleans Med. & Surg. Jour., vol. x. pp. 584, 738.

J. Jones.—Physical, Chemical, and Physiological Investigations upon the Vital Phenomena, Structure, and Offices of the Solids and Fluids of Animals; Am. Jour. Med. Sci., vol. xxxii. p. 13; also Smithsonian Contributions, 1856.

W. J. Burnett.—The Cell: Its Physiology, etc. etc., as deduced from original observations; Trans. Am. Med. Assoc., vol. vi. p. 645. Prize Essay.

W. J. Burnett.—New Points in the Morphology of Cells; Trans. Am. Assoc. Adv. Sci., 1849, p. 261.

W. J. Burnett.—Cell Segmentation; Trans. Am. Assoc. Adv. Sci., 1853, p. 232.

J. L. Riddell.—Origin of Capillary Vessels, etc. etc.; Trans. Am. Assoc. Adv. Sci., 1853, p. 244; also New Orleans Med. & Surg. Jour., vol. ix. p. 173.

W. J. Burnett.—The Development, Nature, and Function of Epithelial Structures; Am. Jour. Med. Sci., vol. xx. p. 70, 1850.

W. H. Byford.—Physiology of Exercise; Am. Jour. Med. Sci., vol. xxx. p. 32, 1855.

W. A. Hammond.—Effects of Alcohol and Tobacco on Nutrition, etc., 1855; Am. Jour. Med. Sci., vol. xxxii. p. 305; also see two essays on Secretion, etc.

W. A. Hammond.—Value and Physiological Effects of Albumen, Starch, and Gum, in Nutrition, etc. etc., 1857; Trans. Am. Med. Assoc., vol. x. p. 513; Prize Essay.

W. J. Burnett.—Tissue and its Retrograde Metamorphosis, 1851; Am. Jour. Med. Sci., vol. xxii. p. 22.

W. S. Bowen.—The Parent Tissue and the Blastema; N. Am. Med.-Chir. Review, vol. i. p. 719.

6. *Calorification.*—Among the American investigators of this function are several of the ablest of our physiological essayists. Laying aside Dr. Metcalf's book, which, although by an American, was first published, and, we think, written in London, we proceed to the valuable essays of Dr. Dowler, on post-mortem and life-temperatures. This is a series of articles every way worthy of a fuller comment, and of publication in book form. Most of them refer to Dr. Dowler's curious discovery of the rise of temperature after death by yellow fever and cholera, observations which stand alone, if we except two or three cases of an elevated post-mortem temperature, reported by Dr. Davy, and supposed by him to have existed during life, and not to be due, as Dr. Dowler has shown, to changes following soon upon dissolution. Dr. Dowler's habit of adventurously exploring the body almost immediately after death, saved him from this error, and enabled him to prove the gradual rise of the thermometer after life had departed.

The recent researches of Dr. Dowler are far more open to criticism, and it is impossible to read without surprise some of his statements in regard to the lowering effect upon the whole system, of applications of cold to one or more parts of it. We are thus informed that cold air, or cold water even, partially applied, in rooms with or without fire, causes a reduction of the temperature sometimes 33° or 34° below the natural heat,—an amount of depression which we are scarcely inclined to suppose possible, and which, at the least, should not pass by without cautious question.

The last paper to which we shall allude, is at the same time one of the best, and proceeds from the pen of Dr. J. Le Conte. It is an examination of the causes of the action of cold upon plants, and is most carefully and elaborately handled, with ingenious and ample experimental illustrations. Professor Payne, of New York, has written a short paper upon a kindred subject—the Temperature of our Forest Trees in Winter. The researches of M. Brown-Séquard upon Human Temperatures are to be found in his published essays. Here, as elsewhere, we have thought it unnecessary to refer our readers to the many essays through which this bold and able physiologist has cast light upon the obscurities of so many of the phenomena of life.

B. Dowler.—Calorification, 1855—Experimental Researches upon, etc.; New Orleans Med. & Surg. Jour., vol. xii. pp. 54, 205, 290, 470, 759, 601.
E. Stevens.—Temperature of the Body; Boston Med. & Surg. Jour., vol. xli. p. 140.
W. H. Ford.—Physiological Uses of Caloric, 1855; Charleston, Med. Jour. & Rev. vol. x. p. 768.
J. Le Conte.—Causes of the Endurance of Cold by Certain Vegetables, etc. etc., 1852; Trans. Am. Assoc. Adv. Sci., 1852, p. 338.
J. Barnes.—On Human Temperatures; Am. Med. Intell., 1839, p. 346.
B. Dowler.—Calorification—Post-mortem; W. J. Med. & Surg., June and Oct. 1844.
B. Hensley.—Post-mortem Temperature; Med. Ex., 1846, p. 149.

7. *Reproduction.*—Here, again, we have a remarkable deficiency in good or useful physiological papers. While the practical points of midwifery have obtained repeated and numerous observers and essayists, the physiology of the organs concerned has been almost neglected—so far, at least, as original research is concerned. One single excellent essay, by J. C. Dalton, upon the Corpus Luteum of Pregnancy, is authority upon the subject of which it treats;* one or two essays on Kiesteine, and a few minor papers in addition, complete the meagre catalogue, and leave us no temptation to linger on so barren a field. We have thought it, however, not improper to add to this list the titles of certain essays upon the effects on offspring of marriages of consanguinity, a subject which has only begun to receive the attention it deserves. A very good paper upon the subject will be remembered by many of our readers as due to the pen of Dr. Bemiss.

J. C. Dalton.—Corpus Luteum of Menstruation and Pregnancy; Trans. Am. Med. Assoc., 1851, vol. iv. p. 547; Prize Essay.
M. Michel.—On Menstruation, with a Case of a Corpus Luteum in Process of Formation, and Coincident with Menstruation; Charleston Med. Jour. & Rev. vol. iii. p. 21. Also, An Early Ovum Described; Am. Jour., Med. Sci., vol. xiv. p. 330.

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* Dr. Dalton's essay is well known and often quoted. It is an honest and careful paper, and needs no praise from us.

C. D. Meigs.—On the Corpus Luteum, 1847; Am. Jour. Med. Sci., vol. xiii. p. 245.
Reproduction—How Affected by Consanguinity—Marriage of Cousins; Am. Assoc. Adv. Sci. 1855, p. 236.
Consanguinity—Evil Effcts of Marriages of, *S. M. Bemiss*, 1857; North American Med.-Chirur. Rev., vol. i. p. 97.

8. The natural history of man as a whole, and the physiological and anatomical peculiarities of races, is a subject which legitimately belongs to the scope of this essay. The inquiry with us has taken a very natural direction, and has furnished us with many essays upon the peculiarities of the negro race, in health and disease. Unhappily the matter has generally been treated in a vague, unscientific way, and the essays in question are only too often notable for their utter want of multiplied and classified facts. These remarks, of course, fail in application to the well-known works of Dr. Morton, and to the essays of Dr. Nott, in the two works edited by Mr. Gliddon. The reports, etc. of Dr. Cartwright, which bear upon this matter, are of too fanciful a character to hold rank as sober scientific papers, and we are so far without a single full examination of the many external differences which characterize the negro race.* Where, for example, are the records of the comparative weights, vital capacities, heights, etc. of the servile and the dominant race? Certainly we are without full details of such general differences as these, and they who examine curiously the essays whose titles are given below, will feel how much is yet to be done in that direction, and how far more thorough such attempts must be than any which have preceded them.

B. Dowler.—Vital Statistics of Negroes, 1856; New Orleans Med. & Surg. Jour., vol. xiii. p. 164.
S. A. Cartwright.—Report on the Diseases of the Negro, and his Physiological Peculiarities, 1851; New Orleans Med. & Surg. Jour., vol. vii. p. 691; vol. viii. pp. 187, 369.
S. A. Cartwright.—Negro Peculiarities—Effect of Alcohol on the Negro, etc., 1853; New Orleans Med. & Surg. Jour., vol. x. p. 150; also vol. ix. p. 195.
Grier.—The Negro and his Diseases, 1853; New Orleans Med. & Surg. Jour., vol. ix. p. 752.
B. Dowler.—Vital Statistics of the Negro, 1856; New Orleans Med. & Surg. Jour., vol. xiii. p. 164.
J. Neill.—On Peculiarities of African Crania; Am. Jour. Med. Sci., 1850, vol. xix. p. 78, and Trans. Phil. Col. Phys., 1851, vol. i. p. 80, New Series.
H. A. Ramsay.—Cranial Dimensions of Negro Child, 1853; Boston Med. & Surg. Jour., vol. xlviii. p. 396.
E. M. Pendleton.—Comparative Fecundity of the Caucasian and African Races, 1851; Charleston Med. Jour. & Rev., vol. vi. p. 351. Also on these and allied subjects

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* In one of his papers, Dr. Cartwright arranges the diseases of the negro, and treats of them in turn. He describes with complete gravity one disease of the negro which is found only on the plantations of masters who are either too lenient or too severe. This obscure malady is christened solemnly Drapetomonia, from *δραπέτης*, a runaway slave, and *μονια*, madness, etc.

connected with the African race. See the Essays of *Morton* and *Bachman*, in the Charleston Med. Jour. & Rev. during 1850–51; also *Dr. Nott's* contributions to *Mr. Gliddon's* two works.

S. H. Dickson.—Statistics of Weight and Height in the South, 1857; Charleston Med. Jour. & Rev., vol. xii. p. 607. These statistics have reference to the white race alone.

P. A. Browne.—Classification of Mankind by the Hair and Wool of their Heads, Philadelphia, 1850.

D. Wilson.—Displacement and Extinction among the Primeval Races of Man; Canadian Jour. of Sci. Indust. and Art; Toronto, May, 1856.

J. Broune.—The Aborigines of Australia; Canadian Jour. Sci. Indust. and Art, May, 1856.

D. Wilson.—Supposed Prevalence of one Cranial Type throughout the American Aborigines; Nov. 1857; Canadian Jour. Sci. Indust. and Art.

C. P. Johnson.—Description of Skulls of Flathead Indians from Columbia River; Virginia Med. & Surg. Jour.; Feb. 1854. Also Papers by *B. H. Coates* and *J. Parish*, On the Effects of Confinement on the Negro; Trans. Am. Phil. Soc., 1843, vol. iii. p. 143; 1849, Trans. Am. Med. Assoc., vol. ii. For other references to American essays on ethnological subjects generally, see Dunglison's Physiology —Art. Varieties of Mankind, Seventh Edition.

We had hoped to notice here certain statistical papers which bear upon the subject of the general physiological history of man, but some limitation is necessary, and we have, therefore, been obliged to refrain from enumerating the essays to which we refer. Among the best of them, and remarkable for originality and conciseness, are the well-known papers of Dr. Emerson, upon the Increase of Births after Epidemics, etc.

ANATOMY.

THE human body is now so well known, and has been so often vigilantly dissected, that it is almost as vain to expect discoveries in special anatomy as to look for those of new rivers in long-settled countries. On this account we can only point to three papers descriptive of distinct anatomical novelties of any moment. We refer to Dr. Horner's description of the tensor tarsi; Dr. Brinton, on an undescribed valve in the right spermatic vein,—a discovery of considerable interest, as affording an explanation of the common occurrence of varicocele on the left side; and, finally, an essay by Dr. Godman, on an azygos vein of the back. To these we may add the older papers of Godman on regional anatomy; Dr. Horner's essays upon the odoriferous glands of the axilla, and upon the mucous membrane of the intestines; and a number of papers by Dr. W. I. Burnett, on various histological subjects, already alluded to. Several papers by Dr. Leidy are also enumerated below. They are, in some instances, authoritative upon the subjects of which they treat, and are so well known as to require no further comment at our hands. We refer more especially to the essays upon cartilage, and upon the liver.

Two of the best of our anatomical contributions are the recent essays of Dr. Isaacs, upon the pleura, and upon the histology of the kidney.

We have also to thank Dr. J. Jones for some very industrious and elaborate tables of the relative weights of organs; (*See* Smithsonian Contributions.) It is almost needless to add, in conclusion, that we have said as little as possible in regard to essays upon comparative anatomy and physiology, where these did not directly illustrate corresponding points and functions in the human species.

J. Leidy.—Anatomy of Articular Cartilage, 1849; Am. Jour. Med. Sci., vol. xvii. p. 277.

J. Leidy.—Comparative Anatomy of the Liver—Measurement of Liver-Cells, etc.; Am. Jour. Med. Sci., 1848, vol. xv. p. 13.

J. Leidy.—Peculiar Bodies Observed in the Skin, etc. of the Human Subject, 1851; Am. Jour. Med. Sci., vol. xxi. p. 150.

J. Leidy.—Anatomy of the Larynx, 1846; Am. Jour. Med. Sci., vol. xii. p. 141.

W. J. Burnett.—Form and Mode of Development of the Kidney in Vertebrata; Trans. Am. Assoc. Adv. Sci., 1853, p. 184. See Nutrition, etc.

J. Neill.—Mucous Membrane of Stomach, 1851; Am. Jour. Med. Sci., vol. xxi. p. 13. Also Mucous Membrane of Colon and Appendix Verm. Cœci, 1851; Med. Ex. vol. vii. p. 85.

J. H. Brinton.—Description of a Valve at the Termination of the Right Spermatic Vein, etc., with Remarks on its Relation to Varicocele; Am. Jour. Med. Sci., vol. xxxii. p. 111.

W. R. Handy.—A New Muscle, 1850; Boston Med. & Surg. Jour. vol. xlii. p. 97.

G. Buck, Jr.—The Sheath of the Penis, 1846; Trans. Am. Med. Assoc., vol. i. p. 367.

Dr. W. E. Horner.—Tensor Tarsi Muscle; Med. & Phys. Jour., vols. xxiii. and xxiv. p. 70.

Dr. W. E. Horner.—Odoriferous Glands of Negro; Am. Jour. Med. Sci., 1846, p. 13.

C. J. Johnston.—Contrib. to Minute Anat. of Teeth; Jour. of Dent. Sci., Balt.; July, 1857.

We have endeavored, in this short review, to give some idea of what has been done in this country for physiology and anatomy. In so doing we have analyzed pretty fully all the papers published in journals during the last ten years, and have also indicated, at least, the titles of the principal essays before that time, whenever they were in any way entitled to the distinction. At best, it is a melancholy catalogue; and considering the adventurous ingenuity of the national mind, as well as the solid character of its achievements in other lines of scientific research, it is not easy to see why a science so eminently experimental as physiology, should be able to boast so few active laborers and so small a number of conspicuous results. Still, even the last year shows a remarkable improvement, and we may hope, at least, that he who ten years hence reviews the earnings of our physiological workers, may have a larger sum of original results to cast into the lap of the great Mother Truth.

Extent of the Pleura above the Clavicle. By C. E. ISAACS, M.D., Demonstrator of Anatomy in the University of the city of New York, etc.

WE have great pleasure in asking the attention of our readers to this very industrious and useful paper. "If," says Dr. Isaacs, "any well-informed physician or surgeon were asked, What is the extent of the pleura above the clavicle? or, What is the height and width of the pleural sac in that situation? he would probably answer, that the pleura generally rises about an inch, or perhaps an inch and a half, above the first rib; that its width here was variable and uncertain, and that he was not even sure that it usually reached above the clavicle." After quoting many authors to prove how generally received is this opinion, Dr. Isaacs describes the mode in which he investigated the point in question.

After recording the necessary measurements in one hundred cases, he proceeded to compare them for the first time, and to draw thence his conclusions.

From these data, thus honestly treated, Dr. Isaacs obtained the following conclusions:—

1. That the top of the pleural cavity does not always present a dome-like shape, but occasionally forms cul-de-sacs, which extend upward, like the fingers of a glove, into the recesses of the neck. Sometimes, also, these are prolonged laterally across the median line *to the left side*, and pass upward, either between the bodies of the cervical vertebræ and the œsophagus, or between the œsophagus and the trachea. The pathological and diagnostic applications of the whole of the information above quoted must present themselves at once to every thoughtful reader.

2. In 100 cases the pleura rose, in 23, two inches, and upward, above the clavicle. Of these, 14 were on the right side, 4 on the left, and 5 on both.

3. In 5 cases only, of the 100, did the pleura fail to rise above the clavicle.

4. In 11 cases the sternal or inner edge of the right pleura extended across, and to the left of the median line.

Dr. Isaacs' observations render it probable that a great height of pleura is to be looked for most commonly in persons with very long necks. The remainder of the paper is taken up with an account of the relations of the third division of the sub-clavian artery to the pleural sac.

The essay thus briefly analyzed is one of the most careful and industrious papers upon an anatomical subject which recent medical literature has furnished. The clearness and brevity of Dr. Isaacs' statements are pleasant enough to meet with, in these days of profuse writing and multiplied theories.

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1. *Researches into the Structure and Physiology of the Kidney.** By S. C. E. ISAACS, M.D., Demonstrator of Anatomy in the University of the city of New York. Read March 5th, 1856.
2. *On the Function of the Malpighian Bodies of the Kidney.** By the same author. Read February 4th, 1857. Illustrated by forty-seven wood-cuts.

IN the commencement of his treatise, Dr. Isaacs remarks, "That he was induced to enter upon a long-extended investigation of the minute structure of the kidney from the fact that the highest authorities were then, and still are, at variance with regard to some of the most important points in the anatomy of this organ. Thus the connection of the Malpighian body with the uriniferous tube, so strongly maintained by Bowman, is denied in toto by Hüschke, Müller, and Hyrtl of Vienna. The existence of ciliated epithelium in the uriniferous tubes of the higher animals, of nucleated cells upon the Malpighian coil or tuft, of a fibrous matrix, and the arrangement of the venous plexus, are subjects upon which much difference of opinion still exists among anatomists. It was evidently necessary that these points should be determined before we could arrive at a satisfactory physiology and pathology of the kidney." The cause of this difference of opinion among such excellent observers seemed to be that their means of investigation were insufficient. Thus some relied altogether upon the appearances obtained by injection, others trusted to those derived from specimens, which were viewed as transparent objects under the microscope. After very many experiments upon the tissues of the kidney, with various chemical reagents, Dr. Isaacs was enabled to render minute portions of the organ beautifully transparent; and by combining the use of injections with the above processes, obtained many new and exceedingly clear and satisfactory views of its structure, numerous plates of which are here given. The details of the various plans and processes for this purpose are related in the work, to which, for want of space, we can only refer. After alluding to some well-known points in the anatomy of the kidney, the author next examines the epithelium lining the uriniferous tubes. To this great importance has been given by the highest modern authorities, upon the diseases of the kidney, and especially by Bowman and G. Johnson. According to these writers, the urine tubes are lined by spheroidal, or, as they term it, glandular epithelium. Acccording to the observations of Dr. Isaacs, the epithelium, both in the convoluted and straight tubes, is of the "*pavement* or *tessellated*" variety, and he infers that, when it is met with in the rounded form, "either that the kidney is not fresh, or is in a pathological condition, or that the epithelium has been changed by the mode of examination." It is, however, very difficult to obtain the organs in such perfectly normal condition as to show the epithelium in a satisfactory manner, and accordingly every exertion was made to obtain the healthiest specimens for this purpose; very carefully executed plates of the appearances under the microscope are here given. In frogs, snakes, turtles, etc. etc., the uriniferous tubes are lined by *ciliated* epithelial cells, by the action of which the current of urine in the tube is directed and urged onward to the ureter. The existence of such cells in man and the higher animals is still a much-disputed point among anatomists. Dr. Isaacs states, that after making many examinations in order to determine this question, he "resorted to the large establishments in this city for killing oxen, sheep, dogs, rats, etc., and examined the kidneys *immediately* after the death of the animal." The result was that ciliary motion was occasionally observed in dogs, and sometimes in the kidneys of sheep and oxen, "but that it is in them very imperfect, or, as it might be said, in a rudimentary condition."

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* From the Transactions of the New York Academy of Medicine, vol. i. part ix.

Several views are given of the arrangement of the venous plexus, and its relation to the tubes and Malpighian bodies, which we pass over.

"*One of the most difficult questions in the minute anatomy of the kidney is, Whether any connection exists between the Malpighian body and the uriniferous tube? and if so, What is the nature of that connection?*" To determine this point, various processes are given, and the result, or the appearances under the microscope, are delineated in fifteen plates, very carefully drawn from nature. The conclusion is, that the description given by Bowman is correct, viz.

that the uriniferous tube terminates by forming an expanded capsule, which embraces the Malpighian tuft or coil of capillaries. This opinion was confirmed beyond the slightest doubt "by very many and repeated observations conducted almost daily for the last twelve months." These specimens and appearances under the microscope were also witnessed by many of the best microscopists in the city of New York, to whom reference is given in the treatise.

There is still much difference of opinion among anatomists, "whether nucleated cells exist upon the Malpighian tuft or coil." An important point in physiology depends upon the settlement of this question. Dr. Isaacs remarks that he is not aware that any anatomist has satisfactorily demonstrated epithelium upon this tuft, in the higher animals. To determine this the following processes were adopted:—1. "By injecting watery and etherial solutions into the ureter, I succeeded in bursting the capsule, the Malpighian tuft or coil having been previously only slightly, and as was intended, imperfectly injected from the artery. Epithelial cells could then be seen upon the uninjected and transparent edges of the tuft." This was in the black bear. 2. By tearing off the capsule with a needle, small nucleated cells could be seen on the reversed and internal surface of the capsule, while the tuft remained covered by cells of larger size than those on the interior of the capsule. The cells of the tuft and those of the capsule were differently affected by chemical reagents. 3. Fine *scrapings* of the kidney were agitated occasionally for two or three days in a test-tube, the water having been frequently changed. By this method the epithelial cells within the capsule were washed out, so that the space thus left between the tuft and the capsule became filled with water, which had soaked through the capsule; various points of the surface of the tuft could now be seen, covered by nucleated cells. Dr. Isaacs remarks:—"By the different processes just mentioned, I consider the existence of nucleated cells upon the surface of the Malpighian tuft, and consequently its analogy with other secreting organs, as conclusively demonstrated."

The author next considers the functions of the Malpighian body, which we shall notice more particularly when we come to the second paper, which treats especially of this subject. According to Mr. Bowman, whose opinions represent those of a majority of the profession at present, the Malpighian tuft lies entirely naked in its capsule, and its office is simply that of separating water from the blood, while the urea, lithic acic, and salts are separated by the epithelial cells of the tubes, from the blood of the venous plexus which surrounds them. The author differs from Mr. Bowman in his interpretation of the structure of the kidney of the boa constrictor, and in its supposed analogy with that of the human kidney; but the arguments and facts which he adduces would require more space than we can at present devote to the subject. We therefore pass on to that part which treats of the fibrous matrix of the kidney.

This was first described by Mr. Godolphin, in 1842. Notwithstanding its physiological and pathological importance, yet its very existence has been questioned, and is even now denied by several high authorities. It seemed, therefore, to the author, that the subject demanded fresh investigation. Prepared according to the process which he recommends—"a thin section of the kidney exhibits under the microscope a kind of mesh, network, or honey-comb arrangement, the cells of the honey-comb, however, having no bottom. In the natural condition of the kidney the smaller cells or openings transmit the tubes, the larger cells or openings are occupied by the Malpighian bodies," etc. etc. Plates of the fibrous matrix of the rat, dog, gray rabbit, raccoon, gray squirrel, hog, sheep, ox, horse, elk, moose, and human subject are here given.

Great pains were taken to prepare the matrix from perfectly healthy human kidneys, and Dr. Isaacs remarks that it is rare to find a human kidney *perfectly* healthy. "Out of more than five hundred subjects which I have examined in this city, I have seen but very few in which the kidney could be considered as in an entirely healthy condition." A view is given of the healthy fibrous matrix as contrasted with that taken from the kidney of an intemperate person. The matrix in the latter is shown to be withered and indurated. Many of the Malpighian bodies and tubes were constricted and diminished to less than half their natural size. A plate is given of the healthy matrix of the sheep, wherein it is shown that the minute vessels pass through the substance of the fibrous rings. Consequently when the matrix becomes indurated in the small "cirrhosed" kidney, this contraction by pressure on the vessels must interfere with the circulation, nutrition, and secretion of the organ, and their various morbid products, as pus, albumen, tube-casts, etc. may be found in the urine. In examining into the nature of the matrix, it was subjected to the action of various chemical reagents, by which it was concluded that the matrix is composed entirely of the white fibrous tissue, without any admixture of the colloid elastic tissue.

The proper substance of the kidney was found to consist—1, of the uriniferous tubes; 2, of the arteries, veins, and intermediate capillary plexus; 3, of the lymphatics; 4, the nerves; 5, of the plasma of the blood; 6, a few rounded and granular nuclei can sometimes be seen scattered in the substance of the matrix.

We now come to the second paper, which is upon the function of the Malpighian bodies.

In opposition to the views of Mr. Bowman, previously quoted, Dr. Isaacs believes that these bodies are actively engaged in secreting several of the proximate elements of the urine. This view was deduced from the following facts:—

1. "Urea, lithic acid, and the salts of the urine have been found to exist in the blood of healthy animals. In various diseases, and especially after extirpation of the kidneys, these substances are found in large proportion in the blood. It is then proved that they pre-exist in the blood, and are merely separated from it in the kidney.

2. "The renal artery *must* necessarily contain these proximate elements of urine, and as the Malpighian tufts are placed upon the terminal twigs of this artery, they *must* consequently enter the tuft.

3. "Most diuretics enter the circulation, and can be detected in the urine. They can arrive at the kidney only through the renal artery, and consequently must enter the Malpighian tuft."

4. It has been demonstrated in this paper that the Malpighian tuft is covered by nucleated cells, and is, therefore, a glandular structure, every way adapted for separating the proximate elements of urine.

5. "In serpents, alligators, turtles, etc., the Malpighian bodies abound throughout the cortical substance, and in some of these animals, throughout the whole structure of the kidney, yet their urine is secreted in the semi-solid state. It is not easy to reconcile this fact with the theory that the Malpighian body merely separates water from the blood.

6. "In the kidney of a patient who had been jaundiced for several years, I ascertained the presence of the coloring matter of the bile in the capsule of the Malpighian tuft, and in the commencement of the uriniferous tube. By the application of a drop of nitric acid the Malpighian bodies exhibited the usual changes of color which are seen when this acid is brought in contact with the bile. I therefore concluded that in this case the coloring matter had been separated by the Malpighian tuft, passed into the capsule, and downward into the uriniferous tube."

By tying the ductus communis, or common bile duct, in dogs, bile was also detected *in the Malpighian bodies*, and to some extent in the uriniferous tubes.

7. Many experiments were performed upon animals, of introducing into the stomach and intestines various coloring matters, which entered the circulation and were afterward detected in the kidney. Among these substances were finely pulverized indigo, Prussian blue, solutions of madder, Brazil-wood, cochineal, carmine, log-wood, Persian berries, animal charcoal, and lampblack. "In some Malpighian bodies, the various coloring substances were sometimes seen in the centre of the capsule, while a clear interval existed between the colored portion and the inner surface of the capsule; thus showing that the coloring matter had not left the tuft. In other instances, the central portion, corresponding to the tuft, was only slightly colored, while a deeply colored part was situated between the tuft and the internal surface of the capsule. *I think these experiments conclusively show, that the Malpighian tuft can and does separate coloring matters from the blood, which have been absorbed from the stomach and intestines, and have thus entered the circulation.*"

8. In two instances lithic acid was detected in the Malpighian bodies of the kidneys, which had been removed from the bodies of persons who had passed, before death, large quantities of the lithate of ammonia, and lithic acid crystals.

9. Some experiments were also made upon animals, to ascertain the effect of highly stimulating diuretics upon the secreting structures of the kidney. With this view, the nitrate of potassa, tincture of cantharides, turpentine, and phosphorus were severally given, at different times, to cats and dogs, and in all instances it was noticed that the Malpighian bodies were much congested, sometimes ruptured, and occasionally there was much congestion of the intertubular plexus.

10. With a view of causing a large amount of blood to be thrown upon the kidney, the abdominal aorta was ligatured in animals, a short distance above its bifurcation; the effect was to produce enormous distension and congestion of the Malpighian bodies and venous plexus. In connection with this, it is interesting to refer to the operation of Sir A. Cooper, for ligature of the abdominal aorta, in which case there was suppression of urine for more than twenty-four hours.

Incidentally it may be here mentioned, that the injected state of the vessels resulting from this operation greatly facilitates the investigation of the structure of the kidney. It was observed by the author, that the kidneys of persons who died from suppression of urine were often in a congested condition. This, taken in connection with the foregoing facts, would point to the importance of local depletion and counter-irritation in cases of suppression of urine and retention of urea in the blood, to the necessity of avoiding diuretics, or at least using them with great caution.

11. We may now speak of the conclusions to which the author has arrived, and what are the facts and deductions, which he thinks may be regarded as new or of an original character, or as tending to confirm or disprove the views of the best authorities on the subject.

a. The employment of certain new processes for displaying the structure of the kidney.

b. Contrary to the opinions of some of the highest authorities, the epithelium lining the urine tubes has been shown to be of the tessellated variety.

c. Ciliary motion, although weak and imperfect, has been seen in the kidneys of the mammalia.

d. The opinion of Mr. Bowman, relative to the connection of the Malpighian tuft with the capsule of the uriniferous tube, has been found to be indubitably correct.

e. Oval, nucleated cells exist upon the Malpighian tuft of the higher animals.

f. "*All the facts adduced in this paper lead to the conclusion that it is to the Malpighian body that we are to attribute the principal agency in the secretion of urine.*"

g. For the above and other reasons given in the paper, the commonly received physiological views of Mr. Bowman are not adopted.

h. A mode of readily exhibiting the fibrous matrix of the kidney, and views of this structure in different animals, have here been given.

i. The arrangement of the minute vessels as they pass through the substance of the matrix, and the effect of its construction upon the vessels, in cases of induration of the kidney.

k. The chemical and histological nature of the matrix.

l. Incidentally, some interesting facts have been stated relative to the absorption of substances which are generally considered to be insoluble, but which have been detected in the kidney, and also in other organs.

m. In conclusion, the author remarks that, "entering upon the examination of this subject without any pre-conceived theory, it has occupied much of my attention for some years past; and for the last twelve months I have labored upon the subject almost daily, sparing neither time, trouble, nor expense, and carefully guarding against arriving at any conclusion, until after long-continued and repeated examinations.

"The facts from which deductions have been drawn have all been obtained by the careful examination of the kidney in many animals, and especially in the frog, turtle, snake, alligator, fish, bird, mouse, rat, squirrel, cat, dog, raccoon, rabbit, hog, sheep, deer, elk, moose, ox, horse, black bear, rhinoceros, monkey, and in man." With regard to the plates, they were all drawn from nature with the exception of one only, the greatest care having been taken to insure accuracy in every instance.

Experimental Researches Relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum, when singly and exclusively used as Food; being one of the Prize Essays of the American Medical Association for 1857. By WM. HAMMOND, M.D., Assistant Surgeon, U.S.A.

The essay before us is a remarkable addition to our knowledge of the physiology of nutrition, and the metamorphosis of tissue. It is not less remarkable as a straight forward autobiographical record of the sacrifice of comfort in the pursuit of a scientific result. We can easily give the main results of Dr. Hammond's researches, but nothing except a complete analysis of the whole paper would enable us to render justice to the industry and self-devotion of the author. He who is at once the observer and the observed, in such an investigation, has need of a degree of energy and endurance with which few men are endowed. So far, however, science has made no demand to which her votaries have not responded so eagerly that men are found ready to submit to any hardships, endure any mode of life, to gain the simple prize which she sets before them.

To show how the essay before us is a sermon on this text, we will analyze it rapidly and briefly. Eighteen pages are taken up with general remarks, statement of chemical methods employed, and a determination thereby of Dr. Hammond's standard of excretion, weight, etc. The researches determining these latter points extend over five days. They are merely the necessary preparation, and we learn from them, for future comparison, the following particulars:—1st. The average daily excretion of water, urea, uric acid, chlorine, sulphuric acid, phosphoric acid, etc., in the form of urine. 2d. The weight of the fæces, their amount of contained water, and the proportions of their ether, alcoholic and aqueous extracts, and insoluble residue. 3d. The weight of the body, the pulse, and the temperature of the body; and 4th. The normal proportions of the various ingredients of the observer's blood. We are also told all essential particulars as to the height, size, habits, and history of the subject of these experiments, so that, on the whole, Dr. Hammond must be about as well and accurately described as any other specimen of the genus.

With this preparation Dr. Hammond began his experiments. During ten days he eat no food but albumen from bullock-blood, and drank only distilled water, or snow water. All other conditions remained unchanged. Every day the ingesta and egesta were carefully weighed, and the pulse, temperature, and feelings noted. It is a curious record. On the sixth day the albumen became nauseating, and on the seventh day *albumen appeared in the urine.* On the tenth day Dr. Hammond became very weak, slept ill, and experienced a severe diarrhœa and some mental confusion. He recovered his usual health a few days after the close of the experiment, upon resuming his usual diet. On comparison of his general condition on the tenth day, with the standard arrived at before he began to take the albumen, Dr. Hammond came to certain conclusions, well supported by tables of his analyses, which we are sorry not to have space to quote. Under this exclusively albuminous diet, the urine decreased absolutely, both as to solid and fluid ingredients. Relatively, however, the solids were increased in amount. Thus the urea increased, but not largely. The uric acid increased considerably. Chlorine, sulphuric, and phosphoric acids were lessened.

The whole amount of fæces increased, owing to the diarrhœa on the last two days; otherwise the mean daily amount of fæces was less than in health. The fæcal solids, as well as the ether and aqueous extracts of the fæces, were diminished. The water of the stools and the alcohol extracts were increased.

The weight of the body fell off. The pulse rose. The temperature fell. Meanwhile the blood lost water, blood corpuscles, soluble inorganic salts, and fat, gaining, on the contrary, solids, fibrin, albumen, and extractive matter. From these data Dr. Hammond proceeds to discuss a number of physiological problems, on which we cannot now dwell.

Article second of the essay relates a similar series of experiments upon the ingestion of starch as the sole aliment. The results are of equal interest. At the close of ten days of this exclusively farinaceous diet, Dr. Hammond was in a condition of ill health, from which he recovered but slowly. From the sixth day his urine exhibited reaction indicative of the presence of sugar. The pulse rose, the temperature increased, headache and indigestions came on, and the system assumed an inflammatory tendency, which showed itself in fever, etc., and in the difficulty with which even the slightest scratches healed. Finally a comparison of the results thus obtained with those of the standard series evolved the following conclusions:—

The urine fell off in amount, and all its constituents were lessened excepting those classified by Dr. H. as "residue," a term which must include coloring and extractive matter, rich in carbon, creatine, sugar, etc. This loss of urinary solids is explained by Dr. H. as due to the fact that "these substances must have been entirely derived from the disintegrated tissues of the body; the food containing no material from which they could have been elaborated. The amount of fæces is stated to have been lessened, as well as that of each of its constituents. Curiously enough the weight of the body declined but 389·71 grains; proof sufficient that a good deal of the starch was in some form assimilated, most probably, our author thinks, as fat derived from the metamorphosis of the amylaceous food so exclusively employed. On the close of these experiments the blood, which was again examined, showed an increase of fat, fibrin, and extractive matter—results easily to be anticipated, after the use of a starchy diet.

Article third describes Dr. Hammond's observations upon the exclusive use of gum. It is unnecessary to analyze freely this portion of the essay. Four days of a diet of gum Arabic produced so much physical indisposition, and such an invincible desire for other food, that even the self-devotion of Dr. Hammond gave way to the instincts of the system, and he wisely contented himself with the results thus far acquired, after four days of gum diet. He found, at this time, the urine increased as to its fluid only, the solids having fallen off. The fæces increased very largely in amount, owing to the great quantities of undigested gum which they contained, scarcely any of this substance seeming to have been absorbed. The loss of weight was very considerable, and the author, properly, we think, concludes, as did Lehman, that this article is useless, as a diet, in small amount, and hurtful, he adds, in larger amount.

The physiological inferences which naturally follow upon these researches are of extreme interest, and will repay very amply a careful reading.

On the Constitution and Physiology of the Bile. By JNO. C. DALTON, M.D., etc. Am. Jour. Med. Sci., Oct. 1857.

THIS is a very interesting essay, chiefly devoted to the chemistry of the bile. Dr. Dalton has repeated and confirmed the researches of Strecker, etc., and has also added, we believe, some original results of his own. If, however, in every paper supposed, like this one, to be novel in its views or experimental means, the author would distinctly state at the close what he claimed as new and original, we should more distinctly comprehend how much science had gained by him. Those who are not versed in organic chemistry, and who as physicians read such articles as this one, as matters of general medical interest, are too apt to attribute to the author of the paper a larger share of what appear as its results than he is of right entitled to. As we are conscious that such an intention is quite remote from Dr. Dalton's wishes and aims, we may here state that the evil thus alluded to is one which has been common to many physiological and other papers upon this side of the ocean, and is, we think, so easy of remedy, and so obvious, that we feel bound to call attention to it whenever it occurs in the essays before us.

At the close of his chemical review, Dr. Dalton examines the question of the time after feeding when bile is most abundantly thrown into the intestines. He correctly thinks that most of the former experiments by *biliary* fistula merely indicate the time of greatest formation of bile by the liver. His own plan, by making a permanent *duodenal* fistula, gives the chance of determining the period of greatest supply to the gut. He thus learned that the supply immediately after feeding is greatest within the first hour; after which it remains constant, or nearly so, as to absolute amount; although, of course, as the supply of food from the stomach and digestive process decreases, the relative proportion of bile to duodenal contents rises. From the eighteenth to the twenty-fourth hour after feeding, there is, however, a marked diminution in the supply.

In regard to its digestive uses, Dr. Dalton determines anew that it precipitates the albuminous matters from gastric juice; that it is the biliary substances, apart from the coloring matter, which cause this precipitate, the pigments of the bile being non-essential to its production. Our author also casts some doubt upon Professor Bernard's view of the physiology of intestinal digestion.*

Finally, Dr. Dalton ingeniously investigates the question of what becomes of the bile. It thus appears, that Pettenkofer's test fails to indicate the existence of bile in the large intestines of the dog, while in the small guts it is constantly found. We may add that Dr. Dalton also sought for the bile-matters in the portal blood, but failed to detect them, notwithstanding the probability of their absorption.

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* See review of V. Bernard's opinions, in the July number of this journal.

There are many minor points which we cannot note, but which give added interest to the main subjects. Dr. Dalton's statements of the means used in his investigation are clearly made, and the crystalline forms of the bile-salts are prettily illustrated by wood-cuts.

The Excito-secretory System of Nerves: Its relations to Physiology and Pathology; being one of the Prize Essays of the Am. Med. Association for 1857. By H. F. CAMPBELL, M.D., Professor of Special and Comp. Anat. in the Med. Coll. of Georgia, etc. etc., May, 1857.

"The object of this present essay," says the author, "is to develope more fully a function of the nervous system, which, though enunciated and described nearly seven years ago, in this country, is only now beginning to be fully recognized by the profession in Europe. We refer to that function which has been called the excito-secretory, and which results from the relations subsisting between the excitor or sensitive nerves of the cerebro-spinal, and the secretory branches of the ganglionic system."

With this preface—the meaning of the term excito-secretory being plain enough—we have only to state that Dr. Campbell sees, in the sympathetic, a nervous system through which the processes of secretion and nutrition may be variously affected. As above stated, our author puts forward a claim to having first set forth this doctrine in 1850; (*Southern Med. and Surg. Jour.*, vol. vi., p. 321, 1850.) Dr. Marshall Hall, who seems also to have been struck with the same idea, finally admitted the priority of claim of the Georgia professor; (*London Lancet*, March, 1857; *Lond. Med. Gaz.*, June and July, 1857; also, *Tr. Am. Med. Assoc.*, vol. vi., 1853.) We find also, in Brown-Séquard's last essay, a note on the same matter. He admits Dr. Campbell's claim as prior to Dr. Hall's, but thinks that both of these gentlemen were not aware of how much had been done in Germany toward the subject of reflex secretion. He also advances a claim of his own, dating back to 1849, and mentions other authors in the same connection.

Now, there is no doubt that very many persons had explained individual facts by a reference to reflex influence, but we do not know that any one has hitherto generalized as broadly in this matter as our author has, or that any one has before this singled out and enunciated the special value of the two nervous systems concerned, as he supposes, in the phenomena commented upon. Assuredly, the general idea, as presented by Dr. Campbell, will come before most medical minds as on the whole a remarkable novelty; although, perhaps, each one of us may have applied the term and meaning reflex, to some single fact, or even to some partial collection of facts connected with secretion.

The first half of the essay is an endeavor to show that the sympathetic is a nerve of secretion and nutrition, distributed so as best to fulfil these functions. We note here, as very clever and well done, Dr. Campbell's commentary on Magendie and Alcock, in relation to the various experiments upon the fifth pair.

The second half of the essay deals with pathological facts, which are applicable under Dr. Campbell's views. The author has, however, by no means exhausted the examples, either normal or abnormal, which may be used as illustrations of his theory. Since he has given us no new facts of his own creation, we have refrained from quoting where nothing but a thorough and careful reading of the whole statement would be of any use. Dr. Campbell adopts at the outset Cousin's phrase,—"That observation becomes experiment when used in severe processes of induction," and accordingly adds no novel experimental elucidations. This exclusive use of the facts prepared by others, perhaps insures an impartial view of those facts; but, it may also be added as a mere result of experience, that inductive reason has never been so felicitous as when hand in hand with experimental skill. We hope still to see Dr. Campbell's views more fully developed, and treated yet further by the keen criticism of multiplied experiment.

Life: Its Relations, Animal and Mental. By J. D. BRUNS, A.M., M.D.

This is a pamphlet of fifty-eight pages, by the accomplished physician who has just taken charge of the *Charleston Medical Journal and Review*, in place of Dr. Happoldt, the former editor. The little brochure before us is a remarkably intelligent sketch of the various theories, old and new, connected with mental physiology, and the relations of mind and body, while, at the same time, it is also an agreeable and often original commentary upon their value. In many places, indeed, the writer is eloquent and forcible, almost everywhere expressing himself with a clearness of definition not usually met with in more ambitious works. Many of Dr. Bruns' criticisms upon Professor Carpenter's views are such as we entirely agree with, and we wonder with Dr. B. how any mind can regard as other than intelligent the feats, etc. of some of the animals, and even insects, to whom the English physiologist is only willing to allow the gift of instinct. The argument against this view is excellently stated by our author, and, like the rest of his pamphlet, is pleasant and easy reading. Certain other parts we had marked for dispute, but the abstract points of metaphysics are not to be settled in a few sentences, and we are disinclined to contradict without also endeavoring to make good our assertions,—a task for which time and space are equally lacking.

Essay on the Physiology of the Nervous System, with an Appendix on Hydrophobia. By B. HASKELL, M.D., Rockport, Mass.; 8vo, pp. 88.

Essay on Muscular Motion. By J. H. WATTERS, M.D., Professor of Phys. in the St. Louis Med. Col.

There is but little danger nowadays of any theory being allowed to enjoy a long reign of quiet authority, and the prevailing hypotheses which seek to explain the functions of nerves, etc. are not likely to prove exceptions, or to escape attack. In fact, every few months bring us pamphlets like those before us, which, although they offer no new facts, serve at least to point out the weaknesses of accepted dogmas. Dr. Haskell's essay is an ingenious criticism of prevailing views, and a protest against the materialism to which he thinks they must inevitably lead us. Unfortunately we have not the space to reply in full to the author's arguments, which would require as much space for their demolition as he has occupied for their construction. The new theory with which Dr. Haskell proposes to replace the present system of explaining the facts of the nervous functions is, however, but a hypothesis, and not altogether novel.

Dr. Waters' essay is one of a series. It is almost altogether an attack upon Professor Carpenter's views, and does not profess to offer any satisfactory substitute for the faith it is intended to destroy.

Bi-Monthly Periscope.

ANATOMY AND PHYSIOLOGY.

1. NEW VIEWS ON THE PHYSIOLOGY OF THE LARGE INTESTINE. By *M. F. Colby, M.A., M.D., etc.*, Stanstead, C. E.—IT is now more than eighteen months since I discovered the error in the received physiology of the function of the large intestine, particularly in that part of it called descending colon, sigmoid flexure, and rectum. Every day's observation since has confirmed me in the correctness of my views. Although I have not been able to engage in general practice, I have had numerous opportunities of testing them as to their bearing on pathology. The knowledge of the true function of the descending bowel does away with all the uncertainty complained of by medical men as to the effect of cathartics, and more particularly of enemas, in many cases. A discussion took place in the Westminster Medical Society, in 1833, which is reported in the *London Lancet*. The discussion developed one fact, that there was a consciousness among all present that there was something not satisfactory in the received physiology; which led to the question by the anatomists present, whether there was anything in the anatomical structure of the descending bowel which could operate as a valve?

I can demonstrate the received physiology of the function of the descending bowel to be untenable, and that it implies the charge that the Creator has left a defect in the organization of a particular part, which renders it inadequate to the performance of the function assigned it. My new physiological doctrine recognizes two distinct apparatuses, each possessing peculiar and distinct functions over and above what is recognized by the old system. These functions were supposed to pertain to that apparatus called the large intestine, and heretofore assigned to the function of organic life, assisted by the voluntary cooperation of the abdominal muscles.

As to the purport of my new physiological doctrine, I quote from lectures which I am preparing, illustrative of the subject, the following recapitulation:—

1st. I assume that the organic function of the colon ceases at its left transverse extremity.

2d. That the portion called descending colon and sigmoid flexure has a separate and independent function.

3d. That this portion of the bowel is anatomically inadequate to the performance of the function heretofore assigned it.

4th. That this portion constitutes the link between the animal and organic life. That it is possessed of both animal sensibility and contractility to such an extent as to entitle its functions to be considered those of animal life.

5th. That although it is to a certain extent subject to the will, and can be brought into action at any moment by it, yet it has an independent instinctive life, which gives it an influence and a power which neither its organic or its animal life could give it.

6th. I assume the name of curator as proper to express its function; and as it is a dualite acting under its instinctive life, at times in a separate capacity, I give the name curator superior to that portion above the superior spinous process of the ilium, and which for the time is devoted to the functions of organic life; and curator inferior to the portion below, usually called sigmoid flexure—this for the time being devoted to the functions of animal life.

7th. That the curator, when acting as a unit, occupies the post of observation between the two lives. That it takes cognizance of the time when the digestion and the nutritive absorption is completed in the small intestine; that it then opens the ileo-colic valve, and at the same time, by a suctive and expansive action, it takes the fæcal matter from the transverse colon and conveys it to the rectum, which it aids the levator ani muscles to raise, and by a divergent action of its two longitudinal muscles it opens to receive the same. The curator, by its instinctive power, recognizes the fitness of the rectum to receive and expel the fæcal matter simultaneous to the opening of the ileo-colic valve; it also at the same time brings into action the abdominal muscles, by which the contents of the small intestine are pressed forward to supply the place of the refuse matter removed from the colon. Its office is therefore not only prehensile in taking the fæcal matter from the transverse colon and conveying it to the rectum, but it exercises the conservative function of keeping the ileo-colic valve closed till such time as the absorption of all nutritive matter from the contents of the small intestine renders its closure no longer necessary.

8th. That the rectum is part of an apparatus which I call rectal, and which is wholly under the domain of the will; that it exercises the function of defæcation, and aids in that of urination and parturition. In its anatomical structure it is analogous to that of the upper part of the digestive tube, with the difference of the reversion of the sphincters. It consists of the strongest muscular portion of the bowel; the rectum, with its muscles; the two sphincters, the levator ani, the coccygei, etc. The same looseness of the cellular tissue, which connects the mucous with the muscular coat of the œsophagus, is found between these coats of the rectum.

9th. That the power of the will extends over that part of the digestive tube which extends from the mouth to within two or three inches of the cardiac orifice of the stomach; so also the power of the will extends from the external sphincter ani to within two or three inches of the left transverse extremity of the colon.

10th. That the rectum, in that abnormal state which results from phlogosis of its muscular coat, has its contractility exalted so as to cause it to act antagonistically to the curator. This is the most frequent cause of constipation and its consequences. When this contractility becomes spasmodic, this resistance leaves the curator to mechanical forces,—hence result accumulations and distension of its weakened side-walls. It is this abnormal state of the most sensitive part of the digestive tube which fills the hospitals with the insane. It is also in this state that the curator, by its instinctive life, acts as a dualite by a peculiar transposition which gives it a great power in overcoming the resistance of the rectum.

11th. The ileo-colic valve may have its function suspended by local disease as well as by peritoneal inflammation; but the most frequent cause is the suspension of the function of the curator, which may arise from antagonism from the abnormal state of the rectum, or from a phlogosed state of its own mucous membrane. A sudden closure of the valve would cause tympanites, ileus or strangulated hernia. A weakened or too active state of the valve would result in emaciation from the premature passing of the nutritive matter.—*Montreal Medical Chronicle*, Aug. 1857.

2. RESEARCHES ON THE HISTOLOGY OF THE NERVOUS SYSTEM. By *M. Jacubowitsch.*—Professor Jacubowitsch, a young Russian *savant*, has been, during the last four years, laboriously employed in the microscopical study of the nervous centres. An account of these has been recently presented by M. Flourens with almost extravagant eulogiums to the *Académie des Sciences*, before which learned body the author also exhibited several beautiful drawings from some of his preparations, said to amount to 25,000 in number. As M. Jacubowitsch is about shortly to publish a full account of his researches, and is also, we believe, soon to visit London in order to exhibit his preparations, we shall at present content ourselves with the following *resumé* of his communication to the Académie, drawn up by himself and by M. de Castelnau.

1. The cerebro-spinal system is composed of three descriptions of cells, which, while assuming the essential form of the animal cell in general, are distinguished by the following special characteristics:—2. Axis-cylinders arise from the periphery of these cells, which they distinguish from each other by their number. (*a*) In the first species, or multipolar cells, the number of axis-cylinders radiating from the periphery varies from 3 to 8, and is habitually 3 or 4. The form of this cell is irregular (*b*) in the second species, or fusiform cells; the axis-cylinders are 3 in number, sometimes 4, but never more. They assume the spindle form, and are much smaller than the multipolar cells. (*c*) In the third species, or bipolar cells, the axis-cylinders are but two in number. These cells are of an oval form, and in size are intermediate between the two other species. 3. (*b*) The multipolar cells are met with in the medulla spinalis, in the cerebellum, and in the corpora quadrigemina. It is remarkable that none are found in the medulla oblongata. In the medulla spinalis they are situated in the anterior cornua and in the gray substance. (*b*) The fusiform cells are found in the medulla spinalis and oblongata, in the cerebellum, in the corpora quadrigemina, and in all parts of the cerebral hemispheres, which are almost entirely formed of them. In the medulla spinalis these cells are placed in the posterior cornua. (*c*) The bipolar cells are found in the medulla spinalis and oblongata,

in the cerebellum, and in the corpora quadrigemina; but the cerebrum does not contain any. In the medulla spinalis they are principally found around the central canal. They are very abundant in the medulla oblongata, constituting its greatest portion. 4. (*a*) The axis-cylinders proceeding from the multipolar cells form the nerves of motion; and it is for this reason that the author terms these cells cells of motion. (*b*) The axis-cylinders of the fusiform cells form the nerves of sensation, and the cells are termed cells of sensation. (*c*) The axis-cylinders of the bipolar cells are in relation with the grand sympathetic; and the cells are termed ganglionary cells. 5. The same and different species of cells communicate with each other as follows:—(*a*) The cells of motion communicate from one side to the other by the anterior commissure, or rather this commissure is formed by the intercrossing in every direction of the axis-cylinders which proceed from these cells. Those of the same side also communicate by the axis-cylinders, which proceed directly from one to the other. (*b*) The cells of sensation communicate from one side to the other by the posterior commissure, or rather they constitute that commissure; but they remain parallel to each other, and do not intercross. Those of the same side communicate directly. (*c*) The axis-cylinders of the ganglionary cells pass by either the anterior or the posterior commissure; and thus communicate from one side to the other, like both the other species. Communications also take place between those of the same side. (*d*) Communications, moreover, take place between the different varieties of cells; but the author has only met with them in the cerebellum, and in the corpora quadrigemina, in which the three varieties of cells occur. 6. The different species of cells are not equally abundant in all the regions of the medulla spinalis. Thus, in the cervical and lumbar regions the cells of motion predominate, while in the dorsal region those of sensation are most numerous. 7. The medulla oblongata is purely and simply a prolongation of the medulla spinalis, a prolongation entirely formed of cells of sensation, containing in their centre a nucleus of ganglionary cells. 8. The cerebellum is formed of four elements,—viz. (*a*) of three elements, constituting the white substance, and which are prolongations by means of the peduncles of the pyramidal bodies which furnish the elements of the cells of motion; of the restiform bodies, which furnish the elements of sensation; and of the ganglionary element, which enters with each of the other two. (*b*) Besides these three elements, the periphery, or cortical substance of the cerebellum, is formed of characteristic pyriform cells peculiar to this organ. From these pyriform cells prolongations are sent to the surface of the organ, forming a layer termed by the author the *couche en baguettes.* 9. The corpora quadrigemina, formed by the prolongations or the peduncles of the cerebellum, by the restiform bodies, and by the horse-shoe shaped commissure, contain the three varieties of cells which they derive from these various origins. But this is the last point where these three varieties are found together. Above this, in the hemispheres, as already stated, the cells of sensation, of which the corpus callosum forms the commissure, are alone met with. 10. With the exception of the optic, the olfactory, the auditory, the vagus, the glosso-pharyngeal, and the hypoglossal nerves, which only consist of cells of sensation and ganglionary cells, all the nerves are formed of the three varieties of cells, with this difference among them, that the nerves of motion contain especially the cells of motion, and so on. 11. Besides the elements now described, the cerebro-spinal system contains a special connective tissue uniting the other elements, and which differs from the connective tissue of other organs by not containing any cells. It is, moreover, in infinitely small proportion as compared with the nervous tissue, and seems to play no other part than that of a bond of union. 12. These three categories of cells vary in different species of animals. They are smallest in size in man, and in general they are small in a proportionate degree to the intellectual development. The number of the nervous cells bears no proportion to the size of the brain.

From this brief *resumé*, M. de Castelnau observes, we are enabled to deduce some of the principal consequences of the fact upon which M. Jacubowitsch's researches are based.

1. The three entirely distinct functions of the nervous system—motility, sensibility, and organic action—are not only exercised by three different orders of nerves, but, moreover, these orders of nerves take their origin in different central anatomical elements.

2. The medulla spinalis, whence spring the general nerves, contains equally and naturally the three orders of elements: but the brain, the organ of the intellect, contains but the elements of sensibility, and the nerves of the special senses are also made up of the same element, with which is united in small proportion only the ganglionary element.

3. The element of sensibility is of different dimensions in man and animals, being smaller in the former and larger in the latter; so that for even an equal cerebral mass the human brain is much more rich in sensible elements than is that of animals. From this to the relative richness of each particular man, and especially of each human race, the distance does not seem insurmountable. Will it ever be passed? That is a question we must reserve, but still with a doubt accompanied by much hope.

4. M. Jacubowitsch's researches scarcely promise less to the pathologist than to the physiologist. They have already shown that in affections of the nervous system, in which the most minute ordinary examination could detect no material lesion, such lesion was nevertheless considerable, since one or more of these orders of elements had become greatly altered in their form, or even had undergone destruction. This single result sufficiently indicates the brilliant horizon that may be opening to the pathological anatomist. If it exhibits to us clearly but a small part of that which we now seem to have a glimpse of, M. Jacubowitsch will not have rendered less service to the practitioner than to the physiologist and the true philosopher.—*Moniteur des Hôpitaux*, No. 108, and *Comptes Rendus*, tome xlv. No. 9.—*Med. Times and Gazette*, Oct. 17, 1857.

3. EFFECT OF RED BLOOD ON THE VITAL PROPERTIES OF THE CONTRACTILE AND NERVOUS TISSUES.—Two years ago, Dr. Brown-Séquard published the results of numerous experiments, showing that red blood—*i.e.* richly oxygenated blood—has the power of reproducing the vital properties of almost all the contractile tissues, when it is injected in the artery some time after these tissues have lost these properties. In a paper read to the Academy of Sciences on the 19th

of October last, this physiologist relates some new facts on this subject. It is well known, since the admirable experiments of Sir Astley Cooper, that animals die from asphyxia when circulation is stopped in their four encephalic arteries, and that if the circulation be quickly re-established, the animals recover almost immediately. Dr. Brown-Séquard has ascertained that if circulation takes place again a few minutes after the last respiratory movement, life does not reappear; but if the lungs are insufflated, the apparently dead trunk revives, and becomes endowed with a very energetic reflex power; and that five, ten, or fifteen, and in one case seventeen minutes after the last respiration, in insufflated dogs, if circulation is re-established in the encephalon, the functions of the brain proper and of the respiratory nervous centre reappear, and the animal may be restored to full life. In heads separated from the body, injections of richly oxygenated blood may reproduce the actions of the brain proper and of the medulla oblongata many minutes (even fourteen or fifteen) after decapitation.

In a second part of his last paper, Dr. Brown-Séquard points out a radical difference between the two kinds of blood, the arterial and the venous—or rather, the red and the black. He has ascertained by a great many experiments that red blood—*i.e.* blood charged with oxygen, whether arterial or venous—never has the power of stimulating or exciting any organ or tissue; while black blood—*i.e.* blood charged with carbonic acid—has the power of stimulation in a very high degree as regards the nervous centres, and in a lower degree as regards the sensitive and motor nerves, and the contractile tissues. On the contrary, the red blood has the power of regenerating the vital properties, while black blood is hardly able to maintain them at a low degree. Dr. Brown-Séquard calls attention to a peculiar mode of action of black blood, which consists in its producing intermittent or periodical effects, and sometimes perfectly rhythmical actions, even in the muscles of animal life. He finishes his paper by the indication of the danger of employing black blood in transfusion. He relates facts to prove that the blood of an animal acts as a poison when injected in the veins of an animal of another species, only when it is black and charged with carbonic acid. The blood of a rabbit may kill the same individual as well as another animal of the same species, if it is injected black—whether defibrinated or not—in its veins; so it is for dogs, for cats, for birds; while, on the contrary, richly oxygenated blood—whether venous or arterial, and defibrinated or not, and taken from birds, turtles, etc.—may be, without any ill effect, injected in the veins of a mammal. The great danger of transfusion of blood, after the entrance of air in the veins and the coagulation of its fibrin, is, therefore, the employment of a liquid containing too much carbonic acid. This danger, and at the same time the danger of coagulation, may easily be avoided by employing whipped venous blood, which, during the operation of whipping, loses its coagulating principle and much of its carbonic acid, and absorbs a good deal of oxygen.—*Med. Times and Gazette*, Nov. 7, 1857.

4. ON THE STRUCTURE OF THE NERVOUS CENTRES. By *Professor Lenhossek.* The following is a literal translation of an abstract of the paper furnished to the Académie des Sciences by M. Lenhossek, giving an account of his col-

lection of anatomical preparations, made after the method of Mr. Lockhart Clarke, F.R.S., and with which, we understand, he has just arrived in London:

"It results from my researches—1. That the central nervous system is composed of gray substance, of white substance, and of an intermediate substance termed the gelatinous substance of Rolando. 2. That the gray substance is formed of a general hyaline mass, having three kinds of nerve-cells—(*a*) Nerve-cells with all their attributes, generally diffused; (*b*) Large Nerve-cells with all their attributes, united into groups. These are seen in the motor columns, in the sensitive columns, and elsewhere. (*c*) Capherical nerve-cells with all their attributes, filled with a deep-brown pigment. These form only the ferruginous substance and the black substance of Soemmering. 3. That the white substance is formed of primary fibres, which terminate in the form of radiations in the different organs of the central nervous system. 4. That the so-called gelatinous substance is formed by the gray substance, which traverses, in the form of network, the bundles of the white substance. 5. That the gray substance has the following relations:—(*a*) In the spinal marrow it constitutes four columns, two anterior motor and two posterior sensitive, united together by the gray commissure. (*b*) In the medulla oblongata these four columns change their relative position, the anterior columns becoming internal, and the posterior external. They preserve this juxtaposition throughout the extent of the rhomboidal sinus. Farther on, the motor columns are continued alone to the bottom of the third ventricle, terminating in the infundibulum. The sensitive columns pass into the optic thalami and the corpora striata. (*c*) At the point where the juxtaposition of the four columns takes place, there the commissure disappears, and the median cloison of Vicq d'Azyr commences, this being formed by a prolongation of the gray substance. This cloison is continued through the entire length of the pons varolii. 6. That in the spinal marrow the white substance of the one side is completely separated from that of the opposite side by the anterior and posterior longitudinal groove; and in the medulla oblongata and pons varolii an analogous separation is produced by the cloison of Vicq d'Azyr. 7. That at the point where the juxtaposition of the four columns of the gray substance takes place, the white substance proceeds more and more forward until the gray substance at last remains exposed in the rhomboidal sinus. 8. That the primary fibres of the roots of all the nerves arise in the gray substance. (*a*) In some cases these fibres proceed from prolongations of the nerve-cells. (*b*) But most commonly they arise in groups, without its being possible to determine their origin. These fibrous groups traverse the white substance in different directions, in order to form the roots of the nerves at the surface. They never contribute to the development of the white substance, nor does the latter furnish any fibres for the roots of the spinal nerves. 9. That the motor roots of the spinal nerves and of the motor cerebral nerves, such as the hypoglossal, the external and internal motors of the eye, the facial, the small portion of the trigeminus, and the common ocular motor, take their origin only in the motor columns. 10. That the sensitive roots of the spinal nerves and of the sensitive cerebral nerves—as the auditory, the large portion of the trigeminus, the optic, and olfactory—proceed only from the sensitive columns. 11. That the roots of the mixed cerebral nerves—as the two superior roots of the accessory nerves of Willis and the pneumo-gastric—arise in both the motor and sensitive columns. 12. That there are four kinds of crossings in the spinal marrow—medulla oblongata and pons varolii. (*a*) In the spinal marrow the primary fibres of the motor roots cross in front of the central canal, and the fibres of the sensitive roots cross behind it. These intra-crossings are produced by a portion of the primary fibres of the roots taking their origin in the opposite side. (*b*) In the medulla oblongata and pons varolii, the primary fibres of the roots of the cerebral motor nerves, and only the motor portion of the mixed cerebral nerves, intercross at the middle of the motor columns, for the same reason as in the spinal marrow. (*c*) In the cloison of Vicq d'Azyr there is an intercrossing from right to left of some of the fibres of the white substance of the medulla oblongata and of the pons varolii. (*d*) There is a crossing of the six walls of the bundles of the white substance and of the medulla oblongata, in front of the central canal, known under the name of the pyramidal decussation. 13. That the primary fibres of the roots of the nervous plexuses of the pia mater, as also those of all the roots of the accessory nerves of Willis, except the two superior roots, proceed from all the periphery of the gray substance. In the plexuses at the surface of the pia mater are found—(*a*) Nerve-cells interposed between the primary nervous fibres. (*b*) Nerve-cells in groups, suspended and floating at the external surface of the nerves of the pia mater: these latter are filled with pigment. 14. That the two olivary bodies are composed of two substances—an external gray, having convolutions, and an internal white. The white substance is formed by the irradiation of the primary fibres of the peduncles of these bodies, which take their origin in the motor columns, and by the transverse commissure which traverses the cloison of Vicq d'Azyr. 15. That the central canal of the spinal marrow runs along its entire length, and opens into the calamus scriptorius. The walls are formed internally by a covering of cylindrical epithelial cells, and externally by a layer of the longitudinal fibres of Clarke, which extend into the epithelial layer of the rhomboidal sinus. In the lumbar region a granular mass is interposed between this fibrillary layer and the epithelial cells. 16. That on each side of the central canal there is a large vein, which successively bifurcates in the region of the medulla oblongata and in that of the medullary cone."—*Moniteur des Hôp.*, No. 129. *Ibid.*

SURGERY.

1. THE ESCHAROTIC TREATMEMT OF CANCER. By *James Syme*, Professor of Clinical Surgery in the University of Edinburgh.—The subject of cancer has been so mystified by the misrepresentations of unscrupulous adventurers, that any attempt to re-establish its treatment upon sound principles may seem a hopeless undertaking; but I nevertheless beg to offer the following observations, in the hope that they will still be of service where rapacity and credulity have not entirely superseded honesty and common sense. It is not surprising that the dread of cutting, and the bad success of operations, too frequently

performed under unfavorable circumstances, should have predisposed to the ready reception of any new proposal for the remedy of a disease so formidable; and, accordingly, the employment of variously prepared caustics for this purpose has, during the last twenty or thirty years, afforded a fruitful field for quackery without and also within the profession. For, whatever may be the sentiments or laws of medical corporations, I shall always hold, that the worst form of quackery is not practicing without a diploma, but using secret remedies, and pandering, by false pretences, to the capricious folly of credulous patients. It could hardly, however, have been anticipated that the medical officers of a metropolitan hospital would so far forget the dictates of professional honor as not only to harbor in their institution a secret cancer-curer, but, by continuing to do so month after month, sanction the delusion that he possessed some beneficial means of treatment unknown to their brethren. Yet the surgeons of the Middlesex Hospital have exposed themselves to this serious charge. They can hardly deny the former part of it; and with regard to the latter, must either plead guilty or profess belief that the juice of *Sanguinaria Canadensis* possesses more active powers than the gilding of a pill. In their anxiety to escape from the horns of this painful dilemma, they now admit that "the vegetable ingredient is practically inert," that the caustic is an old one, and that there is nothing new in the practice of their protégé except daily making incisions and stuffing the wounds with escharotic paste,—a proceeding utterly opposed to the established principles of surgery, and eminently calculated to produce the most disastrous consequences, but which, instead of indignantly condemning, they commend as deserving of general adoption, and as entitling its author to public gratitude. The hollow pretensions of secrecy having been thus endorsed and published with the authority of a metropolitan hospital, it is requisite for the protection of sufferers from cancer that the principles of its proper treatment should, so far as possible, be no less extensively diffused.

It being admitted, by universal consent, that the various forms of disease comprehended under the titles of cancer and carcinoma are not remediable except through removal of the morbid part, the only room for question that remains in regard to their treatment is limited to the choice of means for this purpose. There can be no doubt that excision, if performed under chloroform, affords not only the most speedy and effectual, but also the least painful, mode of extirpating the disease, so far as its extent can be recognized by sensible characters. On the other hand, it is alleged that through the use of caustic a more lasting protection may be obtained against the danger of relapse; and if such were really the case, there could be no hesitation in preferring the latter means. But, unfortunately, from being chiefly used empirically, they are supported by evidence of a very questionable character. For, in the first place, patients who confide their treatment to irregular practitioners, are naturally unwilling to admit that they have received no benefit or suffered damage from venturing upon this course. They are, consequently, very ready to be persuaded that good has been done, and when the expectations thus excited prove to be fallacious, no less slow to confess their disappointment. The wonderful histories of cures, therefore, so frequently put in circulation on the ground of such sanguine anticipations, are seldom counteracted by a knowledge of the issue, however disastrous it may have been. Thus, an impudent quack—the Middlesex surgeons call him a "gentleman"—industriously distributed penny puffs, red, green, and yellow, of which the most prominent feature was an affidavit sworn before the Lord Provost of Glasgow, by a man who had been an out-patient at the hospital here, under my care, that he was cured by the said quack, although he was not so, and died soon afterward of the disease. Now, this poor creature doubtless believed the assurance of that respectable person, and probably signed his declaration from the amiable motive of leading fellow-sufferers in a right direction; but having taken this unwary step, could not retrace it, when taught by sad experience that he had been miserably deceived.

Then, again, there are so many diseased conditions apt to be regarded as incurable, although not really so, that the most careful discrimination is required to prevent their successful treatment from being erroneously assumed as ground for belief in the curability of cancer. But the empirical practitioner is neither able nor willing to make such distinctions, and, so far from endeavoring to dismiss the unfounded apprehensions of a patient, will always be anxious to cherish and increase them, in order to enhance the value of his pretended services. Thus, if a tumor of the breast, supposed to be carcinomatous, should be a serous cyst requiring merely evacuation and irritation of the surface, or a fibrous growth removable without further disturbance of the gland, or a chronic abscess, or even nothing more than that simple engorgement and painful state so common in females whose health is out of order, the quack will not vary his practice or scruple to make the unfortunate patient pass through all the horrors of a prolonged escharotic treatment. Indeed, I once saw a poor woman who had both of her breasts destroyed by caustic, although there was distinct evidence that neither of them had been at all diseased.

In regard to the comparative time and danger of cutting and caustic, there can be no doubt that, so far as the first of these points is concerned, the former mode of relief is greatly preferable; while, as to the last one, there does not seem to be much difference between the two. Unless, therefore, it can be shown that the escharotic treatment is more complete and permanent in its effect than excision, it will be difficult to discover any good reason for abandoning the knife, or complicating it with the addition of caustic. The surgeons of the Middlesex Hospital have published an account of the cases treated under their inspection, which, although evidently drawn up with the desire of presenting a favorable view, may, of course, be regarded as an authentic statement, and not as the mere trumpeting of quackery. They here relate that the process employed by their American coadjutor was to destroy the skin by nitric acid, then to make numerous incisions, and introduce chloride of zinc-paste into the wounds, which were repeated daily for from two to seven weeks, until the object appeared to be accomplished. They have not concealed the severe and protracted suffering endured by the patients subjected to this painful and tedious procedure, nor have they shrinked from confessing its dismal results. Forty-two cases of cancer or schirrous breast are recorded. Of these, five were considered unfit for treatment and declined; three left the hospital without any apparent local disease; and thirty-four still suffered from it in the form of enlarged glands, tubercles of the skin, or open sores. Anything more shocking than this it is impossible to imagine; and I sincerely hope that the conclusive testimony thus published, in a form, externally at least, well suited if not intended for the table of a drawing-room, may tend to counteract the present rage for escharotic treatment.

It has long been a settled principle in surgical practice, that malignant tumors or sores should be either allowed to remain free from disturbance or completely removed, since tampering with them by irritating applications is the most certain means of exciting disease in the lymphatic glands or other textures. But the procedure advocated by the Middlesex surgeons was the most extreme degree of deviation from this rule, since it kept the local disease, together with the patient's system, in a perpetual fret for many weeks; so that no one need be surprised at the effects, which, indeed, these gentlemen thus admit: "Nothing could be more disastrous than this case; and there is no reasonable doubt that the tumultuous increase of the disease was directly owing to the local treatment." If caustic is ever used for destroying malignant textures, it should, therefore, be of such power and so employed as to strike at once to the root of the evil, and I am able to suggest efficient means for this purpose.

Mons. Velpeau, in speaking of the caustic made by mixing sulphuric acid with saffron, expresses his persuasion that it would be the best of all escharotics except for its expense and the difficulty of confining its action within certain limits. It occurred to me that sawdust would supply the place of saffron, and my assistants at the hospital ingeniously devised the following effectual means of restraining the extent of action:—A solution of gutta percha in chloroform is applied to the skin for some distance round the part to be attacked; then a thick piece of the same material, with an aperture cut in it of the requisite size, and softened by exposure to heat, is pressed firmly so as to adhere everywhere to the surface thus prepared; a thin piece is next glued round the edge of the opening, so that, when supported by a stuffing of lint, it may form a wall inclosing the diseased part. Concentrated sulphuric acid, with about an equal weight of sawdust stirred into it, until the mixture assumes a homogeneous consistence equal to that of thin porridge, is lastly applied, in quantity proportioned to the extent of thickness concerned. In the first instance, as the pain is acute, opiates or chloroform may be used; but after a short while so little uneasiness is felt that the patient can easily allow the caustic to remain for ten or twelve hours, when it will be found that the whole diseased mass, though covered with skin and several inches in depth, has been reduced to a cinder, presenting the appearance of strongly compressed tow. Under poultices the slough separates in the course of days or weeks, according to its depth, and the sore then heals without any trouble. If, therefore, patients, from an unconquerable dread of cutting, should prefer the escharotic treatment, or if the circumstances on any other account should seem to render this method eligible, the procedure just described may be found useful.

In conclusion, I beg to offer the following principles or practical rules for the treatment of cancer:—

1. The treatment of cancer may be divided into curative and palliative.
2. The curative treatment should not be undertaken when the local disease

is so seated or connected as to prevent its complete removal; when the lymphatic glands are affected; and when the patient's general health is deranged.

3. Removal may be accomplished by means of the knife, escharotics, and ligatures.

4. Of these means, in general the knife is best, and ligatures the worst.

5. Escharotics may be used with most advantage when the disease is superficial.

6. Escharotics, employed with a curative view, should always destroy the whole morbid part by one application.

7. The palliative treatment is generally best accomplished by means of soothing applications and attention to the general health.

8. When the local disease is very troublesome it may sometimes be relieved for a time by destruction of the morbid growth.

9. The best agent for this purpose, and also with a curative view, is concentrated sulphuric acid properly applied.—*Edinburgh Medical Journal*, Nov. 1857.

2. Excision of Joints.—[The most notable feature presented by operative surgery in Great Britain during the past few years, is the extent to which resection of the articular ends of the bones of the extremities has been carried. In the rage which at present seems to prevail in London for this formidable procedure, doubtless many patients have been made to suffer unnecessarily; but, on the other hand, we are equally sure that a larger number have been saved from far worse mutilation, or from death itself. The operation may, indeed, be looked upon as one of the great triumphs of modern surgical art; and as exhibiting in some measure its favorable results, the character of the cases to which it is adapted, and the high authority for its performance, we extract from recent numbers of the *Medical Times and Gazette* the following statistical report of the principal London hospitals for the second quarter of the present year.]

Case I.—St. Thomas's: Mr. Solly.—A man, aged twenty-seven, in very reduced health from disease of the knee-joint of a year's duration. Numerous sinuses existed, and there had been profuse discharge. The articular surfaces of the three bones were sawn away in each instance very superficially. The man afterward sank, death taking place about three weeks after the operation.

Case II.—St. Thomas's: Mr. Simon.—A man, aged forty-two, in very delicate health. Disease of the ankle-joint had existed for three years, and several sinuses existed. Excision of the articular surfaces of the tibia, fibula, and astragalus was performed, the latter bone being very extensively diseased. The patient sank, and died on the fourth day.

Case III.—St. Thomas's: Mr. Simon.—A man, aged forty, the subject of disease of the extremity of the humerus. A piece of necrosed bone had been removed some months previously, and on the present occasion a partial excision of the joint was performed, the outer condyle being wholly cut away. The ends of the other bones being sound, were allowed to remain. Recovered well, but the joint will probably be stiff.

CASE IV.—The Dreadnought: Mr. Tudor.—A Lascar, aged thirty, under care on account of disease of the left elbow-joint. Several sinuses existed, and he was much reduced in health. Excision of the lower fifth of the humerus, of the ulna below the cornoid process, and of the articular inch of the radius, was performed. It was the separation of the periosteum and the roughened state of the bones which rendered such an extensive resection needful. The man has done remarkably well, and the wound is now nearly healed. As yet there is not much power of voluntary movement.

CASE V.—St. Thomas's: Mr. South.—A boy, aged nine, under care on account of disease of the knee-joint, of strumous character, and of six months' standing. Resection of the articular ends of the bones on May 30. Favorable progress.

CASE VI.—St. Thomas's: Mr. Le Gros Clarke.—A boy, aged fifteen. Disease of the elbow-joint, of a year's standing. Excision on May 23. Doing well.

CASE VII.—St. Thomas's: Mr. South.—A woman, aged forty, in very fair health, the subject of disease of the knee-joint of three years' standing. Excision of the whole articulation on May 23. Death on July 9.

CASE VIII.—The Westminster: Mr. Holt.—A woman, aged twenty-three, in very feeble health. Disease of the knee-joint had followed an injury received seven weeks before admission. After six weeks' further treatment it became manifest that excision presented the only alternative to amputation, and it was accordingly performed on June 23. The curved incision was practiced, and about an inch of the femur and half an inch of the tibia sawn away, the patella not being interfered with. The cartilage was ulcerated on the posterior part of the outer condyle, and the corresponding surface of the tibia; the synovial membrane was pulpy and thickened, and an abscess, which communicated with the joint, extended up the back part of the femur. The tendons of each side were divided. She bore the operation remarkably well, and less constitutional disturbance followed than is usual after amputation. The limb is at present quite straight, and the wound nearly healed.

CASE IX.—The Westminster: Mr. Holt.—A very delicate boy, aged four. Admitted on account of necrosis of the femur, extending into the knee-joint, and of two years' duration. Three sinuses existed, two of which led down to diseased bone. Upon opening the joint by the usual curved incision, the cartilage of the external condyle was found wholly removed, together with that of the corresponding surface of the tibia. About three-fouths of an inch of the femur were sawn away, and half and inch of the tibia. In the extremity of the femur, as thus exposed, was a considerable cavity containing a sequestrum. The dead bone was removed, and the cavity gouged, leaving a mere circumferential shell. The patella being healthy was not interfered with, nor were the tendous divided, as the limb was easily brought into position. Considerable shock was felt at first, but afterward he became comfortable, and is now doing very well.

CASE X.—The Westminster: Mr. Holt.—A boy, aged seven, in a wretched state of health from disease of the hip-joint of two years' standing. Considerable swelling existed, and there were several sinuses leading to diseased bone. The femur was not dislocated, but forcibly retained in the acetabulum by false anchylosis. The head and neck of the femur were sawn away, and some necrosed bone from the acetabulum also removed.

Case XI.—St. Bartholomew's: Mr. Coote.—A soldier, aged twenty-eight, in good health, admitted with disease of the elbow-joint of eight years' duration. A single long incision was practiced, and the articular extremities of the three bones removed. Recovered well.

Case XII.—The Westminster: Mr. Hillman.—A boy, aged three, the subject of diseased elbow-joint of three months' duration, and consequent on injury. Carious bone was easily felt, and as his health was beginning to suffer, excision was determined on. A single long incision was practiced, and the extremities of the three bones were removed July 7. Doing well.

Case XIII.—King's College: Mr. Fergusson.—A girl, aged fourteen, the subject of diseased elbow-joint from infancy. There was much chronic thickening about the joint and several open sores, but the child's health was still good. Anchylosis already existed. Mr. Fergusson cut out a wedge-shaped mass, which comprised the articular extremities of the three bones. Passive motion was commenced on the fourth day, and the process of healing advanced rapidly. Under treatment.

Case XIV.—St. Mary's: Mr. Walton.—A strumous girl, aged fourteen, the subject from early childhood of chronic swelling of the knee. It had become painful only one month before admission. The tibia was partially dislocated backward and upward, and the knee bent at nearly a right angle. A splint was used for nearly a month, but without obtaining any benefit—the joint, on the contrary, having become more swollen, red, and painful. It was now determined to excise the joint. The horseshoe incision was adopted, and the patella and the articular ends of the femur and tibia were removed. The joint was found wholly disorganized. All seemed doing well for three days after the operation, when rigors set in, and were soon followed by delirium, jaundice, and extreme prostration. Abscesses formed on the wrists, and backs of hands. She died, with all the symptoms of pyæmia, on the tenth day. The wound had united to a considerable extent by first intention. The autopsy did not reveal anything of importance.

Case XV.—University College: Mr. Erichsen.—A man, aged thirty-nine, in fair health, the subject of diseased elbow-joint, consequent on a blow three years before. Excision after the usual method on July 8. Doing well.

Case XVI.—University College: Mr. Erichsen.—A healthy boy, aged seven, under care on account of diseased elbow-joint of three months' duration. Excision. Recovery.

Case XVII.—King's College: Mr. Partridge.—A strumous-looking Creole, the subject of old-standing disease of the knee-joint. The joint was anchylosed at almost a right angle with the thigh, and he suffered extreme pain in the part. Resection was performed in the usual manner, and the leg put up in the swing-splint. Union slowly took place, and he was sent to the seaside for further benefit to his health. Recovered.

Case XVIII.—King's College: Mr. Partridge.—A boy, aged thirteen, in fair health. The limb was useless from anchylosis in a bent position, and the part was moreover liable to frequent attacks of inflammation. An unsuccessful attempt had been made to straighten the limb under chloroform. In the resection the H-incision was adopted. About an inch of the femur was removed, a portion of the patella, and a thin slice of the tibia. The bones were found firmly anchylosed together. In sawing through the femur a small abscess was opened in its outer condyle, which had probably communicated with the joint. The operation was performed on June 13; all went on well, and the wound was almost healed on August 27, the bones being all but firm.

CASE XIX.—University College: Mr. Erichsen.—A boy, aged seven, the subject of disease of the hip-joint, of nearly three years' duration. The head of the femur was excised on January 7. After the operation the limb was kept in position by a bracket-splint. There was profuse discharge, and the boy was very low for some time. Abscesses subsequently formed, and second removal of carious bone was practiced on May 20. Since that he has slowly improved. Under treatment.

CASE XX.—King's College: Mr. Fergusson.—A man, aged thirty-four, for sixteen years the subject of stiff knee. The joint was wholly disorganized, and resection was accordingly determined on. The patient did well after the operation, and the splint was taken off at the end of six weeks. The operation was performed on May 2, and the man was discharged well on August 5.

CASE XXI.—King's College: Mr. Fergusson.—A strumous girl, aged twenty-one, for six months the subject of inflamed elbow-joint. Resection by the single long incision was performed on May 16, and the patient afterward did very well. She was discharged cured on July 29, having a very useful arm.

CASE XXII.—King's College: Mr. Fergusson.—A girl, aged ten, had been for several months under treatment on account of contracted knee. By means of splints the limb had been got almost straight. The joint, however, continued painful, and Mr. Fergusson determined to resect. The operation was performed in the usual manner, and the articular surfaces of the three bones were sawn away. The patient did remarkably well, and when, at the expiration of six weeks, the splint was removed, it was found that firm bony union had taken place. The patient was discharged on August 10, (two months after the operation,) with an excellent limb, the shortening being not more than half an inch.

CASE XXIII.—King's College: Mr. Bowman.—A boy, aged eleven, the subject of diseased hip-joint, of twenty months' standing. The femur was not dislocated, but its articular head was partially absorbed. It was resected, and, one edge of the acetabulum being carious, was gouged. He did well after the operation, and is now nearly recovered, having been able to be about on crutches for some months. The operation was on April 4. His health has greatly improved.

CASE XXIV.—King's College: Mr. Bowman.—A girl, aged five, for two years the subject of diseased hip-joint. In the resection the acetabulum was found to have had its borders broken down, and to contain soft gelatinous granulations, and pieces of loose bone. The horizontal ramus of the pubes was bare. The head of the femur had lost two-thirds of its substance. The child was placed in the hammock-swing (as designed by Mr. Heath) from the very first, and progressed remarkably well. The wound has now all but healed, and her general health is very good.

3. EXCISION OF THE KNEE-JOINT.—[The most perilous of the operations enumerated in the preceding report is undoubtedly that of excision of the ends of the bones constituting knee-joint—an operation which, although established years ago by Park and Moreau, has only very recently recovered from the opprobrious position into which it had fallen by the recklessness and incompetency of those who seized upon it soon after its first introduction, for the purpose of professional and public notoriety. To Mr. Fergusson, of London, is due the credit of its revival, and to Mr. Butcher, of Dublin, the profession is largely indebted for a complete exposition of the history of the operation, the circumstances under which it may be considered justifiable, the best methods of procedure, and the results so far ascertained. Mr. Butcher's instructive contributions may be found in the February number of the *Dublin Quarterly Journal of Medical Science;* and in the November number of the same valuable periodical he reports a case of his own, which so fully illustrates the great principles involved that our readers will excuse us for copying the account entire, notwithstanding its length.]

"Timothy Swift, aged twenty-seven years, a laborer, admitted into Mercer's Hospital April 8, 1857. *History.*—In February, 1854, the man was carrying a heavy sack of wheat; he slipped and fell to the ground; the weight crushed the limb. His left knee suffered severe stretching and contusion, which confined him to bed for nearly three months; after this the joint was stiff, and performed its motions very imperfectly, yet he returned to his employment. Shortly after, a dull pain lurked in it, greater at some times than at others, and some swelling remained. In about seven months after the primary accident he tripped in jumping over a ditch, and violently wrenched the joint a second time, after which he was obliged to remain in the house for several days. A few months passed over, and again he endeavored to earn his livelihood by employment; at this time frequent exacerbations of pain seized upon the part, and stiffness of the articulation increased. In this way he persisted in working on, but could not run or move the leg rapidly. Things thus progressed until about sixteen months before his admission to hospital, when he was violently thrown from a restive horse that he happened to be riding; the animal fell upon him heavily, bruising the left knee again; immediately after the accident the left leg and thigh swelled rapidly, and the patient was laid up, confined to bed, for about six months. After this he was treated by several medical men, but with no marked benefit, when he came to Dublin, in September, 1856, and was subjected in several hospitals to the most appropriate treatment. Not obtaining relief, he became discontented, and placed himself under the care of a quack doctor, who took all the money he possessed, and then dismissed him with the pleasing consciousness that he could not be cured. On the date already mentioned he sought my advice, and was admitted to hospital. Though his general health was not shattered to any alarming degree, there were many symptoms that awakened in my mind apprehensiveness of tampering any longer with a disease that was gradually, slowly, and surely undermining the healthy springs of life. The injurious consequences originating and set up from the local malady threatened, and that not far off, a more dangerous manifestation of their withering effects,—in few words, the management of the case required decision, promptitude, and judgment. The constitutional sympathy was evidenced by a rapid pulse, never below 100; by impaired digestion, a capricious appetite, frequent nausea, often vomiting. The body was but little wasted, yet on looking to the local changes, a very marked difference existed between the volume of the sound limb and that of the affected one. The right thigh measured in its circumference, at the widest part, 20½ inches, while the corresponding measurement in the affected limb was only 15 inches. The widest part of the calf of the sound limb measured 11½ inches, while that of the left was only 9 inches. The outline of the joint was lost, and its configuration spoiled; a puffiness of the soft parts filled up each sulcus around it, so that its walls and boundaries presented rather a cylindrical form. The patella was movable; there was free motion of the leg in every direction; great lateral mobility—that is, on the leg being pressed one way and the thigh to the opposite side, an unnatural amount of lateral motion was permitted, only to be explained by the destruction of the interior restraining ligaments of the joint; flexion and extension, to a certain extent, were permitted—indeed, extension was allowed nearly to the full, but flexion beyond a right angle induced the greatest torture; percussion at the heel elicited at once deep suffering and excruciating torture in the joint, so as to make the patient start with terror and alarm; there was no increased secretion within the joint, or marks of abscesses as having ever occurred. It was clear that the diagnosis pointed to thickening of the synovial membrane and ulceration of the cartilages, destruction of the head of the tibia to a greater extent than that of the condyles. All particulars considered, the case was by me considered perfectly suitable for excision.

"On the 15th of April, 1857, I proceeded to operate after the following manner, the patient being placed under the influence of chloroform. I adopted the H-incision, the cross-line passing beneath the patella; the flaps were with rapidity dissected back, and the shreds of the crucial ligaments spared by disease were divided, and next the lateral ligaments; in freeing the ligamentous attachments to the bones behind, the greatest precaution was adopted; all being separated to the extent required, I swept the knife around the tibia and the femur close to the attachment of the soft parts, and then took the saw bearing my name, and cut the bones from behind forward. It is necessary here to lay caution on the operator in using the saw; he should ever remember the altered position of the limb, to facilitate the protrusion of the ends of the bones, and according to the angle of elevation must the direction of the blade of the saw traverse. The simple rule I would lay down for the correct execution of the section is this: the blade of the saw must pass in a direction parallel with a line drawn in the transverse axis of the articulating surface; accordingly, this procedure was carried out; thus, when the limb is placed in a horizontal position, the one in which it is to be maintained for cure, the cut surfaces of the bones will be evenly together, no space will intervene between them behind or before; the wide surfaces oppose each other; all disposition to gliding one from the other is guarded against, and the most favorable circumstances are insured for intimate union. In the published records of cases it will appear that, in some instances, the surgeon has had to apply the saw a second and a third time to make the bones meet; if this be so, I am then warranted in enforcing my advice. By section planned after this method, the condyles of the femur, with their connecting osseous bond to the depth of a quarter of an inch, were removed, and a slice from the upper surface of the tibia, nearly three-quarters of an inch in thickness, was cut off. To warrant the removal of these parts I may just state that the incrustating cartilages of the condyles were entirely removed; the head of the tibia was similarly affected, and, in addition, deep pits were excavated by caries in each condyle, to the depth of a quarter of an inch. This being effected, all the thickened and diseased synovial membrane was clipped away, and the disorganized fatty mass below the patella; not a trace of the interarticular cartilage remained; the patella was coated with lymph beneath, and appeared to have struggled healthily from the disease around it; it was, therefore, suffered to remain. Thus, then, the accuracy of the diagnosis was established, and examination of the osseous surfaces pronounced them healthy. Three arteries, which bled rather freely, were next tied; the flaps at the transverse incision were brought together and maintained so by fine points of interrupted suture, and the lateral incisions were left open for the ready escape of blood and serum, the purging of the cut parts. The leg was with ease put into the straight position, and placed at once in the padded box-splint I had prepared for its reception; a splint was then laid over the anterior part of the thigh, and the tapes fastened, sustaining upward the hinged sides of the box; the foot was steadied by a footboard falling into the grooves within, and thus the leg was pressed upward so as to keep the divided osseous surfaces in contact; lint steeped in cold water was laid along the lateral incisions, and maintained accurately in position by the sides of the box when elevated. The chloroform acted admirably: though the man was at first thrown into some violence, yet after the lapse of a few seconds he was totally subdued, and slept unconsciously all through. Shortly after the anæsthetic was discontinued, he awoke quickly, and was unconscious of the operation having been performed. Thus, quite conscious, with the limb immovably adjusted, the man was removed from the operating theatre to bed, when he got a full draught of wine. Shortly after, he discharged his stomach, a not unfrequent consequence after the use of chloroform. This sickness should be watched for, anticipated on the part of the surgeon; and, after emesis has taken place, the pallor, coldness, and collapse can readily and entirely be removed by a full warm stimulant—none better than a tumbler of hot punch with an opiate in it. Such was administered in this case, and by me in many others, with the desired effect, persistent quietude of the stomach; to restore general warmth, heat should be applied to the limbs and body. In two hours after the operation reaction was fairly established, and the patient complained of pain; a general weeping took place from the external lateral incision, and also from the internal; the quantity was such as to call for interference to check it, and it was very simply done. The sides of the box were let down, and compresses of fine lint laid over the points from where the blood issued most copiously, and finger-pressure maintained them in their places: all disposition to hemorrhage ceased by a perseverance in this mode of treatment for little more than half an hour; then gently the hands were taken away; a few additional pads were laid over each compress, so that when the sides of the box were again elevated, a gentle and equable support was more forcibly afforded throughout. Thirty drops of tincture of opium was given every third hour; and I ordered ice to be placed in the mouth to quench thirst. 7 P.M. No return of bleeding, and pain not considerable; reaction fully developed. 9 P.M. Pain very trifling, and dozed away; gave a tumbler of punch and thirty drops of tincture of opium, after which he slept steadily, though before this he had slight spasms and tendency to startings of the thigh forward; however, this was controlled by the anterior splint and the full opiate, which now completed the sedative influence of the drug.

"April 16th. Had a good night and slept with tranquillity, and this morning is much refreshed; pulse 104; tongue furred, and thirst; urine freely passed in quantity, yet skin hot; limb lying in excellent position, and exempt from pain; took some tea and toast for breakfast. 3 o'clock P.M. Continuing to feel comfortable; opium to be continued. 9 o'clock P.M. Free from pain, no uneasiness whatever in the limb; thirst alleviated by effervescing draughts in combination with the opium, and by the placing of small morsels of ice frequently in the mouth.

"17th. Had an excellent night; pulse 100; skin still hot, but thirst diminished; full opiates every third hour throughout the day.

"19th. Going on most favorably; the patient slept all night, and took his toast and tea for breakfast with appetite; let down the sides of the splint, the external and internal alternately, to soak up the fluids discharged from the wounds, which was quite practicable without stirring the limb from its posterior support; the full opiates to be continued.

"20th. The patient slept all night without interruption, and this morning his pulse was down to 86: it is soft, yet not feeble; his tongue is clean, the thirst nearly gone, and his bowels gently moved, and urine passes in full complement; he took his breakfast with appetite. I let down the sides of the box and soaked up purulent matter, which freely escaped from the wounds; placed dry linen over the pads on either side, but did not lift or disturb it from the surface upon which it rested.

"29th. Since last report everything has progressed in the most favorable way; a slight fullness was perceptible toward the inner side of the lower third of the thigh; this, however, was effectually controlled after fifty-six hours' pressure of well-applied graduated compresses, gently directing the discharge from behind forward. The transverse wound is now quite healed, and the lateral ones discharging pus freely, which I cautiously removed each day, as already specified, without lifting the limb.

"May 5th. This day, for the first time since the operation, I lifted the limb from the box, twenty days after the operation, the anterior splint being firmly held to the limb by assistants, or, rather, the limb up to it, and renewed all the dressings. No soreness or excoriation of the posterior surface of the buttock, thigh, or back; neither was there any pointing of matter backward, the lateral incisions affording a ready outlet for it as quickly as it might be secreted.

"May 6th. Discharge greatly diminished; wounds quickly closing in; no pain; sleeps without an opiate now, and no tendency whatever to spasm; he eats and drinks freely. Removed to a fresh bed.

"June 1st. Ever since last report gradually and steadily proceeding. The discharge has become very much diminished, and the lateral wounds contracted considerably; pressure on the patella gives no pain, and but little pus is forced out by pressure upon it; the leg and thigh are becoming rigidly connected; and pressure on the heel does not in the least degree elicit pain—a sufficient evidence that the change brought about at their junction is a healthy process.

"It is unnecessary to continue the daily report: both the careful dressing of the part, the mode of treatment pursued upon the limb, and the dietetic rules prescribed continued to be the same, with but little alteration, up to July 2d. At this period a small abscess formed just below the patella; from it matter could be pressed out through the external lateral wound; but I cut short its route, and passed a knife into the abscess perpendicular to the surface; this allowed immediate exit to the contents, and at once almost the propriety of the measure was borne testimony to by the quick consolidation of the parts around, and the total dispersion of œdema and swelling. Now so healthily did the repair go on, and so effectually between the divided bones, that the patient could lift the limb *en masse* from the bed without the least fear. No yielding of the parts was consequent upon this trial—nay, more, on taking the limb between the hands and moving the leg and thigh in a contrary direction, antero-posteriorly or laterally, not the least motion was produced between them—an efficient test of the stoutness and integrity of the combining medium, the bond of union. Shortly after this an abscess and sinus formed above the patella, and to the inner side, over the sheath of the vessels in Hunter's canal; the contents from it could be gently pressed toward the internal lateral wound, and thus a ready outlet afforded for its discharge; pads, compresses, and well-applied, broad, adhesive straps obliterated it in a short time with accuracy and precision. The thickening of the parts around, particularly in the vicinity of the patella, was quickly reduced by suitable bandaging from the toes toward the knee, and from the groin downward, both meeting around and supporting the newly-applied and engrafted parts. After each dressing of the limb it was again steadily fixed in my fracture-box.

"The review of this case from first to last is most pleasing: from the beginning to the end there was never any alarming symptom. I attribute the favorable issue to the following causes:—

"1st. The judicious selection of the case; for, though the joint was irretrievably destroyed past all hopes of repair, yet the bones were not diseased beyond their articulating surfaces—therefore too large a quantity had not to be cut away.

"2d. The operation was expeditiously done under chloroform; therefore comparatively little shock.

"3d. There was no hemorrhage; no persistent weeping from the wound permitted; therefore but little exhaustion.

"4th. The wound being dressed in a special manner, the limb was at once placed in the box, and the adjusted bones restrained from the slightest deviation forward, backward, inward, or outward. Moreover, by the adaptation of the footboard the leg was kept fairly pressed up against the thigh, which in its turn was sustained in a contrary direction by the weight of the trunk, the proper axis being secured by the long arm of the splint resting parallel to and against the body. Now it should be borne in mind that this portion of the splint was not as yet lashed to the trunk by the web-girth, because during all this mechanical appliance the patient was insensible, under the influence of chloroform, and any pressure on the chest, so as to interfere with respiration during this tranquil sleep, not only would have been injudicious, but highly dangerous.

"5th. The position of the wounds, each lateral one being placed well back toward the popliteal space, thus readily allowing a free exit for all secretions, and effectually guarding against all pouching in the ham.

"6th. The quietude, the repose in which the limb was suffered to remain for several days after the operation,—the long period of three weeks having elapsed before it was gently and steadily lifted, after the manner described, from its bed; though prior to this time on several occasions the discharge was readily soaked up, without the slightest disturbance of the member, owing to the construction of the box.

"7th. The full exhibition of opium during those days when wicked irritation might have been anticipated; the due exhibition of stimulants and nutritive diet, from the moment that the stomach would tolerate them at all to the termination of the cure.

"The condition of the man at present (11th September) is all that can be desired: long since the box has been laid aside, and the limb is steadied by the application of a splint behind, as in my former case; the bones seem to be grown into each other; there is not the slightest yielding or motion between; it is a permanent union, and resists shocks; the most forcible percussion at the heel neither elicits pain nor motion; the patient is able to rotate the limb from the hip inward and outward, flex and extend it with ease and confidence. There is a slight discharge from the wound on the inner side still, but this I have rather solicited, keeping it open as a drain by which any secretion, either of pus or serum, might readily escape. I have not permitted the man yet to walk upon the limb, though I have no doubt he could do so, and indeed he feels that he could do so if he tried; he lies upon the outside of the bed with his clothes on, and in a few days he will be walking about. The motions of the hip and ankle-joints remain as flexible as before the operation. The subject of these remarks is now as robust and as strong-looking as any man to be seen, and on contrasting the limbs as they rest side by side the amount of shortening is but very trivial. The degree of emaciation is not so characteristic now as before the operation. On the whole, the case is one with which I feel very deeply satisfied."

4. OPERATION FOR IMPERFORATE RECTUM NOT IMPRACTICABLE. By *C. E. Buckingham, M.D.*—William, the son of William Lund, was born on the 6th of December, 1851, and on the morning of the following day the nurse reported that there was an obstructed anus. On examination, the cleft of the nates was

found sufficiently marked, but there was no evidence of an anus, either by protrusion or discoloration. During the night there had been occasionally bilious vomiting, and latterly straining, as if to evacuate the bowels. There had been no discharge of urine. Had taken no food of consequence, but had tried to nurse. The countenance looked badly, and there was lividity about the mouth and eyes. Was somewhat stupid; did not cry, but was constantly moaning.

Operation thirty-two and a half hours after birth, with the assistance of Dr. Henry Osgood Stone. The child was held upon the lap of the nurse, its nates resting over the right knee, and the knees raised as for lithotomy. I made an incision in the centre of the cleft of the nates, from the scrotum to the coccyx, and crossed this with another, at right angles, from the tuberosity of one ischium to the other. The dissection was carried on with a sharp-pointed straight bistoury, backward, and a little to the left, for two inches. No evidence of the neighborhood of the rectum being obtained with the finger, I passed a hydrocele trocar into the wound, in the same direction, a half-inch further. On withdrawing it, meconium was found upon it. The wound was then enlarged with the knife, and a female catheter was introduced, through which an enema of warm water was administered. There was immediately a fair discharge of meconium, and a slight discharge of urine.

The child cried but little, and the whole loss of blood was not much more than two drachms. A few spoonfuls of milk and water were given, and it was dressed in the usual manner, no application being made to the wound. Half an hour later the moaning had ceased, the child looked brighter, and there was a profuse dejection.

5 P.M. Has had two full evacuations, but has not vomited nor passed urine. At 5 P.M., on the 8th, I introduced a sponge-tent two and a half inches, with some little difficulty. During the attempt at introduction, the efforts of the child to evacuate the bowels produced an audible passage of air through the penis, which was rendered visible by the spattering of urine, and perceptible to the hand, which was laid above the pubes.

Dec. 9th. Removed the tent, immediately after which he passed a large amount of almost colorless urine in a jerking stream. No passage, either fluid or solid, by the anus at the time.

I have the regular reports of each visit, but select only such as are of particular consequence.

Dec. 14th. Tried unsuccessfully to introduce a bougie of more than one-fourth of an inch in diameter. Umbilical cord has not yet separated.

16th. Introduced a female catheter with difficulty.

25th. Free dejection. Passed a bougie of ebony, seven-sixteenths of an inch in diameter.

27th. In pain all night. Tumor in left side just over short ribs, size of a small walnut. Nurse says she discovered it last night.

29th. Tumor increasing in size. Passed bougie of 25th again with ease. Some bloody pus followed it.

Jan. 1st, 1852. Opened tumor, which discharged an ounce of pus.

7th. For several days the left side of the scrotum has been swelling.

13th. Opened small abscess in front of scrotum. Child weighs 9½ pounds, an increase of 2½ pounds since birth.

22d. Bougie has not been introduced since the 16th. Has two dejections daily, and sometimes more. The scrotal abscess is well; there has been a slight gathering again on the left side, which broke yesterday and does not discharge to-day.

Feb. 13th. No bougie since Jan. 16th. Three dejections. Weighs 11½ pounds.

March 11th. Gains daily. Nurses well. Bowels open freely every day, without medicine. No bougie since Jan. 16th. Has gained another pound.

Soon after this last report, the child left town for Gardiner, Me., and returned on the 28th of May. Saw it that afternoon. Looks well, and is fat and hearty. About the 1st of May discharged urine and fæces mixed, by urethra; but has not since. For several days last week had diarrhœa, which stopped on the 21st. No instrument has been passed into the anus, which is red and shining about its edges, and bled a little on separating the nates.

Aug. 5th. Has six teeth. For several weeks has had diarrhœa, and fæcal matter passes by the urethra as much as by the anus.

In the fall the family removed to Malden.

Oct. 21st, 1857. Saw Mrs. Lund, the mother, at 36 Leverett Street. She informs me that her boy, upon whom I operated, is still living, and is generally in good health. He occasionally has pain in the pubic region, but she considers him well. There is, however, at times, difficult micturation. The family still reside at Malden.

The above case is given, because it was stated, as appears by the records, at the Boston Society for Medical Improvement, as the belief of one gentleman, "that in the present state of the art it is better that a child born with either of these imperfections (*of anus or rectum*) should die without this operation, although it must occasionally be performed in deference to established opinion." The question may be asked if my case is not one of those exceptions which are said "to prove the rule." If it be so, then the rule is one of those which should be honored in the breach. An *ex cathedrâ* statement—as that from an officer of the Massachusetts Medical College is, and ought to be—may have an unfortunate effect upon many a timid physician, who dares not think for himself, and who would hesitate to ask the aid of one who denounced the operation. If there has been one successful case, which the profession have not known, it it is very probable that in the case-books of other private practitioners there are other such. It is very likely that they have not been brought to light because physicians have had no reason to suppose them peculiarly fatal until now.

The case reported by Mr. Jones, at the Suffolk District Medical Society, has been spoken of as if it were not a fair case of imperforate rectum, because the sphincter contracted upon the finger. If the child had died without a *post-mortem*, would any one have questioned its being a *bonâ fide* case? The recovery is the only evidence that there was merely a septum across the gut.

The case which I have reported is one of imperforate anus, absence of the lower part of the rectum, and communication with the bladder.

So far as my own reading extends, I do not find any great distinction made by writers between imperforate anus and imperforate rectum. The names do not convey a just idea of the malformations, particularly if, by the name, one is to decide upon the propriety of attempting to save life.

In the *Edinburgh Monthly Medical Journal* for January, 1857, which must have been seen by a large number of the members of the profession in this city, is a case precisely like the above. The patient is still living, at the age of thirty-six years, and in perfect health.

Samuel Cooper not only thinks the operation justifiable, but says, "It is the surgeon's duty to do everything in his power to afford relief," and then goes on to describe the operation. He follows with the statement that "by such proceedings many infants have been preserved," in some of whom incisions two inches and more have been made, and alludes to cases by Wolff, Hildamus, La Motte, Roonhuysen, Hutchison, Benj. Bell, and Miller.

It is certainly remarkable that these cases should have escaped the notice of the gentlemen connected with the only institution for instruction in medicine and surgery in active operation in this city at the present time; and it will be equally remarkable if the officers of other schools should arrive at the same conclusions as they have respecting the operation.—*Boston Med. and Surg. Journal*, Nov. 26, 1857.

5. LACERATION OF THE URETHRA FROM MUSCULAR CONTRACTION, WITHOUT EXTRAVASATION OF URINE. *Reported from the Practice of Dr. J. C. Hutchison, in the Brooklyn City Hospital, by R. O. Butler, M.D.*—W. P., seaman, aged twenty-six years; native of United States; was admitted into the hospital, March 25th, 1857, at three P.M. Twenty-three hours before admission he was struck over the region of the left trochanter major by the end of a sugar-hogshead which was being lowered into the hold of a vessel. He was unable to walk after the injury, but could stand on both legs. On the following day, however, he was unable to stand, in consequence of the pain about the left hip-joint. Three or four hours after the accident he attempted to evacuate his bladder, but could not do so, and he observed at this time that the orifice of the urethra was closed with coagulated blood.

At the time of admission he was suffering considerably from retention of urine, which had existed since the occurrence of the accident; he also had a good deal of contusion and pain in the neighborhood of the left hip-joint, which prevented him from turning in bed. Moving the joint increased the pain greatly. *There was no pain, contusion, or swelling then, or subsequently, about the perinæum, scrotum, or penis.* The catheter, introduced by the House Physician, (my hand was still disabled,) glided out of the urethra at the membranous portion to the left, and passed backward, with very slight pressure, so far that there was barely enough of the instrument outside of the meatus to hold between the thumb and fore-finger. On introducing the finger into the rectum the instrument was felt immediately in front of the gut, nothing intervening apparently but the coats of the bowel. The catheter was passed into the bladder after much difficulty, and the urine drawn off.

On the following morning (26th) he was suffering from retention of urine, and

Dr. Krackowitzer, who was visiting the medical wards before the arrival of Dr. Hutchison, introduced the catheter. The instrument several times glided into the false passage, and was detected by the finger in the rectum, immediately in contact with the coats of the bowel. Dr. Hutchison passed an instrument on the same day, and also observed the false passage. No extravasation of urine occurred; the catheter was retained in the bladder eight days without local pain or constitutional disturbance. After its removal the urine was discharged spontaneously, and for three or four days without scalding, but it contained considerable mucus. He had now recovered from the effects of the contusion over the hip-joint, walked about the ward, and felt quite well; his urine, however, could not be retained as long as usual—its discharge was attended with scalding, and it contained mucus in considerable quantity, which adhered to the bottom of the vessel when turned up. He used a copaiba mixture and mucilaginous drinks, but no material change took place, and he passed into the hands of Dr. Minor, whose term of service commenced May 1st.

The irritability of the bladder was now considerable. He had to discharge his urine several times during the night, and was sometimes unable to sleep on account of pain in the bladder. The urine contained pus and mucus. Pariera brava, liquor potassæ, copaiba, etc. were used successively without benefit, and on June 13th an injection of one ounce of a solution containing ten grains of nitrate of silver was thrown into the bladder. It produced considerable pain for a time, which was followed by a marked improvement. He did not get up to pass urine for three or four nights, and the quantity of mucus and pus was greatly diminished.

Six days subsequently the injection was repeated, and was followed by the same benefit as before.

June 30th. Urine passes in pretty good stream, unattended with pain or scalding, unless he walks about too much. The deposit of pus and mucus is one-half less than it was before the injections. Being anxious to visit his friends, he left the hospital, against advice, in July.

The prominent symptoms presented by the preceding case—viz. a discharge of blood from the urethra, retention of urine, great difficulty in introducing an instrument, and the existence of a false passage, observed immediately after an accident—evince, I think very satisfactorily, the nature of the injury to the urethra. It is especially interesting in two particulars—1st. For having been unattended by extravasation of urine, which must have been owing to the valvular nature of the laceration. 2d. The rupture was not caused by direct external violence, but was probably produced, as suggested by Dr. Isaacs, by the violent contraction of the muscles of Guthrie and Wilson, and, perhaps, of the transversus perinei, which took place when the accident occurred.—*New York Journal of Medicine*, Nov. 1856.

6. LIGATURE OF THE DORSALIS PENIS ARTERY FOR HYPERTROPHY OF THE PREPUCE.—D. D., a native of Martinique, aged thirty years, was admitted into the hospital in December, 1856, suffering with chancre, accompanied with con-considerable hypertrophy of the prepuce. The chancre healed under appropriate treatment, but the enlargement of the prepuce remained.

Being anxious to have the size of the organ reduced to its normal dimensions, Dr. Hutchison tied the dorsalis penis artery, for the purpose of producing atrophy of the part by diminishing its vascular supply—that being the principal vessel through which the prepuce is supplied with blood. The ligature came away on the fourth day, and no untoward symptom occurred, except a want of action in the wound, which rendered stimulating dressings necessary. Pressure was applied to the prepuce by means of collodion, containing three grains of iodine to the ounce, which was painted over its surface. He left the hospital June 7th, the hypertrophy being somewhat diminished.

Although ligating the dorsalis penis artery in the above case was not followed by complete relief, the result indicated that the operation may in some cases prove valuable. The suggestion is therefore deemed worthy of being recorded. The arrest of abnormal developments about the face, erectile tumors of the orbit, etc., by diminishing their vascular supply, is well known. I am not aware that the above operation has ever before been performed.—*Ibid.*

7. REMOVAL OF WARTS BY CHROMIC ACID. By *I. L. Crawcour, M.D., etc.*—In a late number of the *Medical Times and Gazette*, appeared some experiments by Mr. Marshall, on the use of chromic acid. Two cases have recently come under my own observation, and the results have been very satisfactory. A gentleman called on me about three months ago, complaining of a wart on the top of his head: it was about the size of a twenty-five cent piece, and the extremity was rough and split vertically. He had suffered from it for several years, and it gave him a great deal of trouble, bleeding whenever he combed his head. I painted it thoroughly, by means of a glass brush, with a saturated solution of chromic acid. The remedy produced little pain, the surface of the wart instantly blackened, and twelve days afterward a scab fell off, leaving a clear reddish surface underneath, and perfectly smooth. I examined this gentleman's head a few days ago; the skin is now perfectly healthy, and hair is growing on it. About two weeks ago, another case presented itself, of a similar character. I applied the same remedy. The scab, however, has not yet separated, but I fully expect the result to be identical with the former. The advantage of this caustic is, that it leaves no scar, and does not destroy the hair-bulbs when applied to the scalp. Its influence is undoubtedly owing to the readiness with which it parts with its oxygen, yielding half of its oxygen when applied to organic substances, passing to the state of green sesquioxide of chromium—this being the most powerful oxydizer we possess. Its preparation is very simple. Make a saturated solution of bichromate of potash, and add strong sulphuric acid as long as any precipitate of chromic acid falls; pour off the supernatant liquor, and dry the residue on a tile or brick. I prefer filtering through a glass funnel partially filled with asbestus. In preparing it, caution must be used not to allow any organic substance, as paper or wood, to come in contact with it, as instant decomposition ensues. The solution I employ is one part chromic acid and one part water.—*New Orleans Medical News*, Nov. 1837.

8. LIGATURING ONE OF THE COMMON CAROTID ARTERIES FOR THE CURE OF EPILEPSY. By *C. Angell*, of Pittsburg, Indiana.—[We quote the following cases, not for the purpose of encouraging the operation which they detail, but only to illustrate its results.]

Have we any known remedy for the cure of epilepsy? Without attempting to explain the nature, cause, or phenomena of this disease, I will present the result of two operations of tying the right common carotid for the cure of this disease.

CASE I.—The first operation was performed on the 2d day of July, 1857, on Wm. Brackus, of this place. He was twenty years of age, short, not over five feet in height, heavy set, large head, short neck, full habit, sanguine temperament, right arm and hand deformed, idiotic in most respects. Has been having fits three or four years, seldom at first, but gradually growing in frequency and severity. After having had a variety of remedies tried without any good result, I proposed tying one of the common corotids, thinking that by permanently lessening the amount of blood passing to the brain that it might cure him. After having had fifteen or twenty fits in the forepart of the day, he was put under the influence of chloroform, and I then placed a ligature on the right common carotid, about one inch below the bifurcation of the external and internal. The operation was performed without any difficulty.

The next day,—pulse 120; complains of difficulty in swallowing; talks with difficulty; complains of no pain; his mind about as it was before the operation; left side partially paralyzed.

Treatment: solution of salts and tartar emetic, as a cathartic and sedative. They operated well; wound covered with oil-silk, and kept constantly wet with ice water; gave nothing to eat but water-gruel and rice-water.

Without describing each particular day, I may say that he continued about as I have described him to-day: paralysis of the left arm and leg complete; still talks and swallows with difficulty; not much swelling about the wound and neck.

He remained in this condition until the night of the seventh day from the operation, when he died in a comatose condition. He never had any symptoms of fits after the operation.

An examination of the neck the next morning after he died, showed no signs of inflammation; the parts all looked healthy and natural. I removed a section of the artery, two inches in length, above and below the ligature; coagulation was quite firm in artery. The family think he would have died as soon as he did if he had not been operated upon. I do not think so.

CASE II.—The second operation was performed on the 8th of July, the same day on which the first patient died. This was on J. Bostick, of Brookston. He is forty years of age, naturally good constitution, full habit, sanguine temperament. Has had fits for seven years, but not so often or so hard, until the last three years; has them now almost every day, so that he is incapacitated from doing anything at all; his mind is also destroyed. He has been under treatment by a great many practitioners, both regular and irregular, but without benefit.

I performed the operation in the same way as in the former case. He soon came from under the influence of the chloroform, said he had suffered no pain, talked without any difficulty.

July 8. Says he feels well to-day; pulse 80; no unfavorable symptoms;

swallows well, mind clear, talks well. I bled him this morning very freely, and put him on tartar emetic and salts, as in the other case. He has continued to get along well, pulse never over 80. He would every few days wake up bewildered or scared, this being the only symptom of returning fits until the 30th, when he had one so severe as to deprive him of sensibility; the next day had one about the same. He says they came on him different from what they did before. Before this he had no warning or premonitory symptoms of their approach; but now he feels a sensation of dizziness of some moments' duration, long enough for him to lie down before they came on.

On the 17th of August he had a slight fit, and on the 5th of September another, making in all four since the operation: it is now the 18th of September.

The ligature came away on the twenty-second day; the wound is all healed up. He is going about attending to his business. He says he feels better than he has done for three years.

His family, and those that are well acquainted with him, all say that they can see a marked change in him,—in his actions, countenance, and more particularly in his mind.

What will be the result I cannot tell. He now has the appearance of being benefited; how long this will continue I cannot determine. Whether the bettering of his condition is owing to the operation, or to the treatment, I cannot say.—*North-Western Medical and Surgical Journal*, Oct. 1857.

9. Novel Method of Extracting a Foreign Body from the Œsophagus. By *David Rice, M.D.*—Mrs. Field, a lady, aged seventy, while eating chicken-soup, accidentally swallowed a piece of bone the size of an American quarter of a dollar cut into a triangular form. The bone lodged in the œsophagus, about two inches below the top of the sternum. Thinking that it might fall into the stomach, she neglected to apply for surgical aid until the fifth day after the accident. In the meantime, she had swallowed neither food nor drink, both regurgitating into the mouth with every attempt.

I was called the fifth day, to try to remove the bone by surgical means. My first attempt was with a piece of whalebone, the extremity being perforated with numerous small holes, into which were fastened a dozen or more loops, about an inch long, made with small linen twist.

With this contrivance I failed, after many patient trials. I could readily reach the bone, but the loops did not fasten to any point of its angular form with sufficient permanency to enable me to extract it. I could even pass the piece of whalebone beyond the foreign body, and ascertained that it rested upon the posterior side of the œsophagus, standing perpendicularly, with two of its corners fastened into the gullet.

I finally took a piece of dry sponge about an inch long, and of such a shape, when dry, as to fill one-half of the œsophagus. This I tied to the extremity of my whalebone-sound. Turning back the head of the patient, I passed it down the œsophagus, *in a dry state*, as rapidly as I dared to do, until I was certain it had passed beyond the bone. I then introduced a little fluid into the mouth, which quickly reached the dry sponge, enlarging it to twice its natural size, completely filling the gullet. I drew it out, and with it came the bone, much to my gratification and the patient's relief.—*Boston Medical and Surgical Journal*, Dec. 3, 1857.

10. FALL ON THE EDGE OF A BROKEN DISH WOUNDING THE NECK AND SEVERING THE COMMON CAROTID ARTERY; LIGATURE OF BOTH ENDS, WITH RECOVERY.

By *George D. Gibb, M.D., M.A., L.R.C.S.I., etc.*—Miss Q——, forty-five years of age, of robust frame, and enjoying excellent health, met with the following accident on August 29th, about noon:—while carrying in her hands a brown earthenware dish, containing an uncooked pudding, the point of her foot caught in a hole in the carpet, she stumbled, the dish fell to the floor, breaking into pieces, and she fell forward, striking the right side of her neck against a piece of the broken dish, which entered the skin below the level of the upper part of the thyroid cartilage, and wounded the common carotid artery. The right temple was also struck and bruised. On receiving these injuries she called out, was raised, and complained only of her right eye; her neck, she said, was nothing; but her father, seeing the blood pouring from the neck in a large stream, had the presence of mind to hold the sides of the wound together till assistance was procured. In about fifteen minutes it arrived, but during that short time, notwithstanding the precaution employed, upward of two pints of arterial blood were lost. The wound, about an inch long, transverse in direction, was closed, the neck bound up, and the hemorrhage ceased. She remained quiet till between three and four o'clock, when she suddenly vomited, and a gush of blood poured from the wound, which now commenced to flow in a large stream; the bleeding was again controlled by her father, while waiting for assistance, with the loss, however, of four pints of this vital fluid.

Mr. Whidborne, who had been sent for, arrived with Mr. Statham at half-past four P.M. The latter gentleman found a very free arterial gush from the wound; the finger introduced into the wound could be directed in almost any course in a ragged cavity, perhaps three inches in length and breadth, and from one to two inches deep. He enlarged the wound in the course of the carotid artery, removing pieces of mastoid muscle and clots of blood, and discovered the source of the hemorrhage to be the main trunk itself. At this time he found it impossible to wholly compress the bleeding vessel and control the hemorrhage without further assistance. I accordingly was sent for, and managed, with the ends of my two fore-fingers, to completely check the escape of blood. The dissection was proceeded with, the wound still further enlarged, and the trunk of the common carotid was got hold of and tied, immediately controlling all bleeding; this was effected about an inch and a half above the sterno-clavicular articulation. On tracing the sheath further upward and slitting it up, the vessel was found to have been torn across in an irregular and jagged manner, the upper end having retracted for upward of an inch and a half. This was only got hold of by further dissection and enlarging the wound upward, when its presence was revealed by a gush of blood, and it was immediately secured within its sheath. The wound was left open, and a piece of cold wet lint applied over it. As much blood was lost up to the time of my arrival as before Mr. Whidborne came—namely, four pints, making not less than eight pints altogether since the act of vomiting.

The patient was now very cold and pulseless, the breathing was almost indistinct, and she lay motionless. Small quantities of stimulants were given at intervals, such as brandy and beef-tea. At ten P.M. her pulse was 96, very feeble and weak; reaction set in after midnight, and next morning the pulse was 100. She was frequently troubled with retching, but the stimulants were persevered with.

The case subsequently did well; the treatment consisting mainly in the plentiful administration of beef-tea and other nutrient fluids, by the mouth and anus, the free use of alcoholic stimulants and opiates. There was but little hemorrhage; the upper ligature came away on the thirty-fifth, and the lower on the forty-fifth day.

She was now convalescent, the wound having closed. Her recovery was perfect, and she left for the country on the 28th of October.

During her illness, large quantities of wine and brandy were given, with plenty of the most nourishing diet, her strength being supported and sustained in every possible way. These were aided by a good constitution and much patient endurance on the part of the patient herself. She had no head-symptoms, but felt her right arm stiffer and weaker than the left; the pulse, moreover, throughout to the present time, has been almost double the volume of the left.

Remarks.—Any one familiar with the phenomena of hemorrhage is well aware that so large an amount of blood cannot escape, in so short a space of time as occurred in this patient, from the wound of a small arterial trunk. Let the wound be never so small, or even allow that the hemorrhage is easily controlled by simple closure of the wound, still the evidence stands before us that upward of two pints of blood had flown very rapidly from the wound. This points very clearly to the fact of a main arterial trunk being wounded; and the first duty of the surgeon should be boldly to ascertain the true source of the bleeding. This being done, his course is then clear as to any ulterior proceeding. Without casting reflection upon any person, it may be truly stated that an oversight was committed in the early treatment of this case, by remaining contented with the arrest of bleeding by simple closure of the wound with adhesive plaster—the knowledge of the large amount of blood already rapidly lost we will suppose borne in mind. The act of coughing, some hours after, reopened the wound; and although assistance was speedily procured, about a gallon of blood had escaped before the proper steps of tying the severed vessel were completed. This might have been prevented had the bleeding vessel been secured at first. The wonder is that the patient rallied from her extremely exhausted condition; but she did do so, and made a most excellent recovery.—*Lancet*, November 14, 1857.

11. A LARGE UTERINE POLYPUS REMOVED BY THE CURVED ECRASEUR WITH DOUBLE ACTION. *Reported to the Medical Society of London by Dr. Savage.*—A woman, fifty years of age, who had been suffering from frequent uterine hemorrhage during the last two years, was admitted into the Samaritan Hos-

pital ten days ago, under Dr. Savage's care. Many examinations had been made elsewhere previously by various surgeons; but a polypus, if suspected, until the day before her admission was probably quite out of reach. A swelling could even now be scarcely made out by the finger introduced far into the os uteri. Sponge-tents were introduced daily. On the third day the tumor became more distinct, and then rapidly distended through the dilated os into the vagina. On the fourth day it could be felt in size and shape like a large jargonel pear, (its neck not much less than its body,) extending into the uterus, to be attached somewhere toward its back part. On the fifth day the polypus was laid hold of by a pair of ring-forceps, the looped chain of the écraseur being passed over the handle of the forceps, slipped up, and was drawn tight, precisely as the cord in the ordinary operation by ligature, and the tumor was brought away without pain or hemorrhage. Dr. Savage observed that the unwieldy look of the instrument was suggestive of much pain and difficulty; but its curve fell into the hollow of the sacrum with the utmost facility, and its point as readily passed into the uterus as high as he thought necessary. As the chain is flexible only on one side, much careful manipulation was required before it could be got where he thought it ought to be. Before working the handle which tightened the chain, the single forefinger readily ascertained that nothing improper was included. The handle was worked at half-minute intervals as soon as decided resistance showed that contraction had commenced. The tumor came away in six minutes. From first to last the patient said she felt no pain whatever. The hemorrhage has not reappeared. Dr. Savage said he had heard of two cases of polypus thus treated in this country, but believed they had not been recorded. He had several times seen M. Chassaignac remove parts highly vascular, with his écraseur, without the least hemorrhage, and thought, as the plan he had adopted in this case was equally safe as the ligature, without any of its obvious annoyances, he would add his testimony to its value through the Medical Society. Dr. Savage strongly recommended an instrument with the double action, the finishing improvement of the inventor, M. Matthieu.—*Ibid.*, Nov. 21, 1857.

12. THE PRESENT STATE OF SURGICAL SCIENCE IN REFERENCE TO CANCER AND ITS TREATMENT. (Read before the Medical Society of London by *Mr. Hird.*)—It was not his intention, the author observed, to enter into a detailed report of individual cases treated by the escharotic applications which of late have been revived by many members of the profession besides himself, but to inquire whether recent experience has shown that we can control the progress of this destructive disease with more certainty, and on sounder surgical principles, than our predecessors were enabled to do. The questions whether carcinoma ever originates and continues as a local disease; whether it ever spontaneously disappears without the interference of art; whether a tumor, originally innocent in its character, is susceptible of cancerous transformation; whether it possesses anatomical, chemical, physiological, and pathological characters, by which we can infallibly distinguish it from other growths, which we are unable to do by the senses of sight and touch; whether, even supposing the constitution to be affected, the ablation of the local disease may not arrest

or retard its fatal course; whether removal ever accelerates it by bringing into activity a force which previously had lain dormant in the system; whether we possess remedial agents by which we can retard or resolve the disease, he considers, embrace subjects of vital consequence, on the solution of which the life of the patient, the truths of science, and the reputation of the surgeon depend. In his observations on the forms of cancer, the author included the epithelial variety along with the encephaloid, scirrhus, and colloid, and objected to its removal from the cancerous group, although it has less tendency to contaminate the lymphatic glands and the system generally than the other three forms of cancer, and differs slightly in its histological elements. After briefly reviewing the important subjects embraced in the origin and development of cancer, in which the preceding questions were answered so far as the present state of science would admit, he proceeded to discuss the treatment. In this section the author dwelt on the means of arresting cancerous growths by medicinal agents, and contrasted the comparative advantages of removing the local disease by caustics and the knife. In reference to medicines, the author believed that if any remedy possessed a power of retarding the progress of the disease, it was arsenic, which he administered with cod-liver oil, and has not found the latter objectionable on the ground of animal oils tending to encourage the fatty matters in the system, on which cancerous formations are supposed to feed. Arsenic, as a preventive of secondary formations after removal of the local disease, he (Mr. Hird) had great confidence in, and in combination with iodine it was strongly recommended by the late Dr. Anthony Todd Thompson; Dr. Copland and the late Mr. Hill witnessed great advantages from its use. The great question of removal by the knife or by caustics concluded the paper. Caustics the author had found more tedious in their operation and more painful than the knife, and occasionally failed to enucleate the tumor, and he has no faith in a supposed physiological action on the constitution through the part treated, by which it has been stated, without evidence to justify the statement, and, in opposition to his own experience, the disposition to return after removal is less than when the part has been extirpated by the knife. He has seen six cases in which the disease returned after removal by caustics, and has read and heard of many more. Nevertheless, there are cases in which caustics offer greater advantages than the knife. In certain localities, and in particular conditions of the tumor, and where loss of blood, or the dread of a cutting operation, would greatly depress the patient. Early operation the author strongly advised, as affording the only hope from surgery in scirrhus, colloid, and epithelioma. In encephaloid he did not advise an operation.—*Ibid.*, Oct. 17, 1857.

MATERIA MEDICA AND THERAPEUTICS.

1. ON THE ACTION OF COD-LIVER OIL IN CHEST DISEASES.—[At a recent meeting of the Medical Society of London, *Dr. E. Smith* read a paper on the action of cod-liver oil, an abstract of which communication, together with the discussion that followed, we take from the *Lancet* of Nov. 7.]

The object of the paper was to show, that while cod-liver oil is a valuable remedy, it acts simply as a fat with certain physical qualities, and may be, and ought to be, supplanted by the ordinary fats used in food. The author pointed out the numerous and serious evils which result from public patronage of this remedy by the profession as regards the relation which exists between the public and the profession, and the great expense imposed upon our charities and poor-law surgeons. He believed that it has tended to lessen the gains of the profession by the indiscriminate employment of it by the public without professional advice, and has tended greatly to lessen the respect for the knowledge of the profession which it is the interest of both the profession and the public to maintain, and, in fact, that it has become, under the especial patronage of medical men, the great quack medicine of the day.

He first considered the chemical constitution of the oil, and then the state of system existing in phthisis, and particularly entered into an inquiry which he had instituted upon five hundred cases as to the appetite for the various fats in food, and the appetite for and effects of the oil. He found that there was a diminished appetite for fat in phthisis, but that in no case was the dislike absolute; and in all some kinds of fat could be taken when others were rejected. Thus, fat meat was taken by more than half of the patients, and bacon fat by two-thirds; while suet in puddings, butter, and milk, was taken by more than nine-tenths of the whole. Afterward he stated the result of the effect of cod-liver oil upon one hundred and fifty in-patients, and proved that in nearly half of them the oil was rejected or of no real service. Of eighty-three who reported themselves benefited, by far the larger proportion referred the good effect to improved assimilation; while of sixty-seven who were unable to continue its use, or who were not benefited, the ill effect was referred to sickness and other circumstances connected with the first acts of digestion. After thus showing the degree of good and harm resulting from the oil, and the degree of appetite for and dislike of fat of various kinds in food, he proved that in the large majority of cases there was an appetite for fats when oil did good, and the contrary when it did harm, but this was not universal; and he also proved that in the very cases in which the oil was rejected there was always appetite for some kind of fat food, and in some cases even for the fat of meat. Hence he proved that there was no ground for the assertion that the oil was more easily digested and assimilated than some of the natural fats in food. The inquiry and medical testimony now prove that cod-liver oil acts beneficially as a nutrient; and he affirmed, from special experience, that the oil has no advantage over the fats in food, provided an increased quantity be taken of such of the nutrient fats as the patient can eat. Hence he urged the profession to distinguish properly between food and physic; and, if the oil is administered as a nutrient, to inform the patient that it is given as food, or, as he preferred, to direct them to increase the nutrient fats in proper quantities and of a suitable kind, and to administer other articles as medicine.

The following were the author's conclusions:—

That neither cod-liver oil nor fat of any kind removes phthisis.

That the cases of arrest of the disease are very few.

That commonly the disease progresses, and is as fatal now as it was before the oil came into general use.

That in about half of the cases the rate of progress is retarded.

That the patient may be both stronger and stouter, and yet the disease quietly progress.

That when the oil disagrees, it is chiefly from its influence upon the digestive organs.

That when it agrees, it is chiefly by improving nutrition; but that in many cases it is believed by the patient to have a local influence.

That this local influence is most important in the pharynx and other parts of the mucous tract.

That it acts almost entirely as a fat, and supplies a defect in the system.

That it has no advantage over fats used in food, and may, like some of them, be taken and rejected.

That there is a large class in whom it is not beneficial, and it should be used with discrimination.

That it is our duty and our interest to dissociate food and physic.

Lastly, that it leaves the essence of the disease untouched; but that the great good which it often does temporarily, proves the importance of fat in the animal economy.

He showed how much more frequently there is appetite for fat in bronchitis than in phthisis and mere debility, and particularly in liver diseases; but he deferred the discussion of the question, and of the use of fats in general, to another occasion. He urged upon the profession the impropriety of poor-law surgeons being compelled to supply the oil, when the guardians ought to give fat in food, and of the medical officers of hospitals and dispensaries taxing the overburdened funds to supply so expensive a food.

Dr. Payne Cotton remarked that the opinions of the author respecting the virtues of cod-liver oil were not those entertained by the other physicians of the hospital for consumption. He himself was an advocate for its employment in all cases. He did not pretend to explain why it did good, but that it was of benefit was sufficiently evident by its effects. Under its use a great number of patients improved, and though it failed in some instances, it did not do so so frequently as Dr. Smith stated. He could only say he had undiminished confidence in its effects. He had tried other oils with a view to determine whether they could be substituted for it; but they were all inferior to it. Among those he had thus tested were train oil, neat's-foot, almond, olive, and cocoanut oil. That which most nearly resembled the cod-liver oil was the neat's-foot. When cod-liver oil was given in the earlier stages of phthisis, in many cases it arrested and retarded the disease, and prolonged the life of the patient.

Dr. Parrott inquired if the cod-liver oil had been used endermically? and whether glycerine had been tried as a substitute for it?

Dr. Cotton had employed glycerine, but it did not act beneficially.

Dr. Semple considered, from the experience he had had of the use of cod-liver oil, that it was of signal benefit in cases of phthisis. In many cases it prolonged life, and added to the comfort of the patient: in some instances, when given in the early stages of the disease, it arrested the complaint and prolonged life to its average duration. He had witnessed remarkable good effects from its administration to children affected with various strumous diseases.

Dr. Webster regarded cod-liver oil as beneficial as an article of food, and that it only did good in phthisis by its nutritive qualities. Phthisis was as fatal now as formerly; and this seemed to show that cod-liver oil had no effect in curing the disease.

Mr. Streeter thought cod-liver oil acted as did other fatty food, except that it contained iodine, which gave it a peculiar property. He thought the profession had been led astray with respect to this medicine, and had trusted too much to it of late in cases of phthisis. He eulogized the use of the old spermaceti mixture, and the preparation of iron and zinc, in phthisis.

Dr. Hughes Willshire said that his experience was opposed to that of Dr. Smith respecting the virtues of cod-liver oil. Whether it acted as a simple nutrient or as a medicine, would depend on the school of pathology to which the person who gives his opinion belongs. In his opinion the oil was of great value in various diseases of children, and in phthisis.

Dr. Camps regarded cod-liver oil as a valuable medicine, and not simply as an article of diet.

2. OIL OF TANSEY.—*Dr. Chapin*, of Winchester, [at a recent meeting of the Middlesex East (Mass.) District Medical Society,] introduced the subject of oil of tansey in its ecbolic and toxicological relations, and related a case in which he was summoned at midnight to visit a married female "in a fit." The patient was found in bed, partly conscious, and in paroxysms. A distinct smell of the oil pervaded the apartment. Vomiting had occurred. He immediately exhibited ipecacuanha and sulphate of zinc, which was followed by free emesis. In an hour the mind became clear, and she got along very well. The woman was four months advanced in pregnancy, and took the oil for abortion. The quantity taken was half a fluidounce. Dr. Chapin stated that some cases have been fatal.

Drs. B. Cutter and Drew, of Woburn, adduced similar cases, and Dr. Underwood, of West Cambridge, spoke of a young woman in a hotel who took the oil to procure abortion. The immediate effect was violent convulsions. At full term a child was born, *not larger than a rat*. The child lived three weeks. This case was mentioned to show that the oil sometimes arrests growth. Dr. Toothaker, of Wilmington, spoke of a middle-aged married woman who took two fluidounces of oil of tansey in divided doses, without effect. She then resorted to the woods, although it was midwinter and the snow knee-deep, and gathered a quantity of savin leaves, an infusion of which was freely taken, without success. At term, she bore a medium-sized child, which for some time was esteemed *non compos*. Now, however, at the age of ten, the child is a bright boy.—*Boston Medical and Surgical Journal*, Dec. 10, 1857.

3. ARSENIC IN CHOLERA.—[As the present progress of cholera from the eastern toward the western parts of the European continent, and its more re-

cent outbreak in the suburbs of London, render it not at all improbable that ere long we may again suffer from this terrible scourge, any new facts in regard to its treatment will prove valuable to our readers. The relief given to a number of cases occurring in London by the use of the arsenical solution in the hands of various practitioners has excited a great deal of interest, and the question in regard to the antidotal powers of the remedy is being much discussed in the British medical journals. As illustrative of the successful results obtained, we quote the three following cases, reported in the *Lancet* of Nov. 28, by C. BLACK, M.D., F.R.C.S., etc.]

The importance of arsenic in the treatment of cholera is a matter of such vital consequence to public health, and of such interest to the physician, in a therapeutical point of view, that it is my intention to place before the profession, from time to time, the results of my experience of this remedy in choleraic disease.

By the production, in this way, of a mass of incontrovertible data of its efficiency in cholera, it will, I trust, force itself upon the attention of medical men; and, as certainly as it shall do this, it will prove to them its specific power over the disease which has hitherto yielded such scanty results to the best-directed efforts of medical art. In placing this high value on the anti-choleraic virtue of arsenic, I yield, not to enthusiasm, but to experience—an experience which, at the present moment, embraces the treatment by this remedy of nearly two hundred cases, in none of which has the arsenic ever failed to produce a speedy and permanent cure. What other remedy, empirical or rational, has produced such results? It is certain that the records of medicine, so far as I know, do not furnish a parallel. If, indeed, the want of experience had lacked the justification of its adoption, the pathological views which are entertained by the majority, of the proximate cause of cholera, and the knowledge which physiological science has educed of the behavior of one poison in the presence of another within the human body, would have placed it in the category of rational, and not of empirical remedies. But experience has justified what theory sanctioned. Not only has it done this, but it will further show, in the details of the following cases, that the remedy in question is applicable to every phasis of choleraic disease, from that which threatens with death within the lapse of a few hours, to that which, by a slower process of passive drain from the bowels, consumes days in bringing its victim to a premature grave.

CASE I.—L. G——, aged forty-eight years, married, by trade a basket-maker, at six P.M. on September 22d, 1857, began to suffer from diarrhœa. From this hour until ten P.M. the bowels were moved four times, the evacuations being thin, watery, and offensive in odor. At ten the purging became much more frequent and severe, and was accompanied by almost incessant vomiting and cramps of the abdomen, legs, and even the muscles of the back of the neck. From the time above mentioned until five P.M. of the 23d, the patient is reported to have vomited and purged at least forty times. Shortly after this hour I saw him. He was writhing to and fro upon a bed, which was placed opposite his house-door, in a room ten feet by twelve, with a ceiling not more than six feet high. The apartment was lighted by a small window, which, together with another window of a foot square, and the door in question, afforded the only means of ventilating the whole house. His countenance was haggard and shrunken in the extreme; eyes hollow; nose and the parts around the mouth of a deep leaden hue; skin very cold; breath cold; voice hollow, squeaking and tubular; frequent thirst; pulse scarcely perceptible; breathing hurried and labored. He had not passed urine since four the night before. A constant moaning was heard, except on the return of cramps, which occurred every three or four minutes, when his sufferings excited loud cries of pain. The purging and vomiting were all but incessant, the vomits and dejections being copious, thin, and evidently serous in their character. He was ordered five drops of liquor arsenicalis every fifteen minutes until the symptoms became less urgent, and then to have the same dose every hour until my next visit.—Twelve A.M.: After the first dose of arsenic there was no return of cramps; the third dose was followed by a complete arrest of purging, while vomiting had occurred but three times during the interval of my first and second visits. The countenance still maintained a haggard expression; the nose in part its leaden hue; a slight degree of warmth was beginning to creep over the skin, and the pulse was now distinct at 120 per minute. Thirst was much less frequent; the breathing less hurried and labored; but neither had the voice lost its peculiar tone, nor had the secretion of the kidneys as yet been restored. He was ordered to take the usual dose of arsenic every hour.—Nine P.M.: The bowels were moved once at three P.M., the evacuations being scanty, and of increased consistence. Has vomited twice, but has experienced no return whatever of cramps. Skin warm; no secretion of urine; pulse 100, larger. To take three drops of the arsenical solution every third hour.

Sept. 24th.—Nine A.M.: Neither purging, vomiting, nor cramps since last visit. Skin hot; face flushed; thirst; pulse 96 per minute, full and strong; passed half an ounce of urine at six this morning for the first time since the commencement of the attack. To discontinue the further use of arsenic, and to take a mixture consisting of the acetate of ammonia, potassio-tartrate of antimony, spirit of nitrous ether, and water.

25th.—Quite well.

Remarks.—This case presented, in the time of its occurrence and the manifestation of its symptoms, all the characteristics of a malignant attack; yet five drops of the arsenical solution completely allayed the cramps, and fifteen the purging; while a few more drops placed the patient in perfect safety. Confident of the power of my remedy to control the disease, notwithstanding the extreme degree in which the case was when I first saw it, I neither ordered friction to be observed, nor the application of external heat to the body; nor did I administer or cause to be administered a single drop of any stimulant whatever. On the contrary, the door of the house was allowed to remain open, and a cold draught of air to play upon my patient, whose only drink consisted of a moderate supply of cold water. These apparent disadvantages I purposely incurred in order to test, as far as possible, the curative power of the arsenic. How well it answered my expectations, the easy, rapid, and complete recovery of the case amply testifies.

CASE II.—H. S——, aged forty-four, married, was seized with sickness and purging at noon, Sept. 24th, 1857. These symptoms did not become urgent until six o'clock in the evening, at which time they became more frequent, and were accompanied by occasional cramps of the abdomen. There were now, in addition to the above symptoms, coldness of the general surface, shivering, collapsed features, and thirst, but no cramps of the extremities, alteration of voice, or any leaden hue of the nose and lips. The pulse was 110 per minute, small, feeble, and stopped by the least pressure. She had not voided urine since twelve A.M. She was ordered to take five drops of the arsenical solution every half hour.

Ten P.M.—Has neither vomited nor purged since taking the first dose of arsenic. Says that she felt the remedy at once affect her for the better. Has now and then slight twinging pains in the muscles of the abdomen; feels comfortable; skin becoming warm; pulse 96, larger. To take three drops of the arsenical solution every second hour.

Sept. 25th.—Nine A.M.: Has passed a comfortable night; bowels moved once; neither nausea nor sickness; skin hot; tongue moist, but coated with a white fur; thirst; passed two ounces of urine early in the morning; pulse natural in frequency, but somewhat fuller and stronger. To discontinue the arsenic, and to take a simple diaphoretic mixture.

26th.—Nine A.M.: Neither purging nor vomiting since last visit; feels quite well.

CASE III.—H. R——, aged twenty-seven, son of the above, married, was suddenly seized at nine P.M., Sept. 24th, 1857, with violent shivering, sensation of impending death, and complete inability to stand or walk. This occurring at a friend's house, he was carried home and immediately put to bed. In a few minutes afterward I saw him. He was then shivering violently beneath a load of blankets, was surrounded by bottles of hot water, and complained of an intolerable weight at the præcordia. The symptoms of collapse were well marked, and were becoming more and more so every minute. He was ordered to take six drops of the arsenical solution every twenty minutes or half-hour.—Ten P.M.: Immediately before taking the first dose, violent cramps of the abdomen had set in, and directly after the exhibition of that dose, a severe paroxysm of vomiting and purging occurred. The vomit consisted of a colorless, glairy, sero-mucoid fluid, mingled with small quantities of food. The dejection was thin, watery, of a faintly bilious tinge, and of a sickly odor. A second dose of arsenic, administered immediately after the rejection of the first, arrested both the vomiting and purging. Has now occasional twinging pains in the muscles of the abdomen and calves, but no decided cramps. The shivering and extreme coldness of skin have given place to a slight degree of warmth. Expresses himself as feeling much better; slight thirst; pulse 100, soft and regular. To continue the arsenic every second hour.

Sept. 25th.—Nine A.M.: Found him sitting up, and down stairs. Took the arsenic until the middle of last night, and then discontinued it, as he felt well. —Nine P.M.: At six this evening the sickness, purging, and cramps returned. He resumed the arsenic, and was relieved by the first dose. To continue it regularly every third hour during the night.

26th.—Nine A.M.: Has passed a comfortable night; neither purging, vomiting, nor cramps since last visit; no thirst; appetite improving; skin warm; pulse natural. To take two drops of the arsenical solution every fourth hour.

27th.—Discontinued the arsenic last evening. Quite well.

Remarks.—The above two cases occurred in the same house and on the same day. The former was one of cholera of ordinary occurrence. The latter, in its very outset, threatened to be unusually severe. In the former, the first dose of arsenic permanently arrested both vomiting and purging; in the latter, a similar result was obtained by a second dose. The latter case exemplifies, in a remarkable manner, the specific value of arsenic—firstly, by a recurrence of the choleraic symptoms on too early a discontinuance of the remedy; and, secondly, by the *immediate* control of those symptoms on the resumption of the arsenic.

PATHOLOGY AND MEDICINE.

1. DYSENTERIC ULCERATION AND SLOUGHING OF THE MUCOUS MEMBRANE OF THE INTESTINES, AS A CAUSE OF ABSCESS OF THE LIVER. ILLUSTRATED BY TWENTY-TWO CASES, OCCURRING IN THE U.S. MARINE HOSPITAL, ST. LOUIS. By *F. V. L. Brokaw, M.D.*—The difficulties of arriving at correct conclusions in the diagnosis and treatment of disease of those organs to which we cannot bring to our aid those evidences gained by a physical examination, (as auscultation and percussion in affections of the heart and lungs, the test-tube in those of the kidneys, etc.,) are lessened to a great extent when a correct history of the causes of disease to which the organs in question have been exposed can be obtained. So also those oftentimes fatal complications or secondary affections coming on in the course of disease, can only be detected by a foreknowledge of the secondary affections by which the original diseases are most liable to be followed.

Considering the liver as an immense gland, made up of a net-work of capillary vesicles investing a secretory duct, the large amount of blood which is made to pass through it in order that certain necessary changes may be produced in its quality, and bearing in mind that it is so situated in the abdominal cavity that all of the matters absorbed from the intestines, both in a state of health and disease, must of necessity pass through it before entering the general circulation, and before they can be acted upon by oxygen, it is reasonable to suppose that the absorption of noxious matter from the intestines in a state of disease, thereby producing a vitiated state of the portal blood, would induce disease of the liver.

Indeed, an association between hepatic abscess and dysentery was long since noticed, but was merely regarded as an incidental occurrence, and it was not until Dr. Budd pointed out their relation as cause and effect, that the frequency of connection between these two diseases could be accounted for; but, as Dr. Budd's explanation of the cause of the co-existence of these abscesses with dysentery, found in the *post-mortem* examinations in cases of the latter disease, has not been generally received by the profession, and having had a comparatively large number of cases of dysentery with hepatic abscess to fall under my notice during the past two years, I propose to add the results of my investigation of this subject as evidence confirmatory of the correctness of Dr. Budd's theory, and also to show more fully the great frequency of this complication in intestinal diseases, that we may be more on our guard in the treatment of bowel affections, and that we may institute such a treatment as will be most likely to secure exemption from this complication.

But previous to the consideration of dysentery as a cause of abscess of the liver, I deem it necessary to note briefly some of the other more obvious and more generally attributed causes of abscess of this organ.

Abscess of the liver may be caused by an external injury, but it is evident that this cannot occur very often, on account of the anatomical position of the liver, the organ being securely protected by the ribs.

A second attributed cause of abscess of this organ is heat, which it is argued acts as a direct stimulus to the liver, and either excites it into inflammation or strongly predisposes it to take on that condition when exposed to other causes. I have no doubt but that long-continued exposure to heat deranges the functions of the liver; the air being highly rarified, the lungs do not receive a sufficient supply of oxygen, and consequently are not able to eliminate that quantity of carbon from the blood which is requisite for the healthy action of other organs. So their functions must necessarily become deranged, and perhaps the liver suffers most, on account of its being an eliminator of carbon, and in this respect resembles, in one of its functions, the lungs. It has under these conditions an undue amount of labor to perform, which deranges its functions, and perhaps excites inflammatory action, which terminates in abscess. But I think it does so far more frequently by causing an increased flow of bile, which is often irritating in its quality; and this is most probably the cause of dysentery, which is so prevalent in hot climates; in other words, that the true origin of hepatic abscesses is to be found in dysentery, as I shall presently attempt to prove. Miasmatic influences, excesses in eating, drinking, etc., might be placed in the same category; as they act as predisposing, and sometimes as exciting, causes of dysentery.

A third cause is phlebitis. It was long since observed, that suppurative inflammation of the coats of a vein—arising from an injury to them, or from the veins becoming involved in disease, so that pus or other noxious matter could enter the venous current—was followed by the formation of abscesses in various organs—as in the lungs, liver, joints, etc.

Abscesses arising from phlebitis, which has had its origin in an injury of the coats of the veins, are most numerous, and are generally found exclusively in the lungs; and this is because those veins which are most exposed to injury—accidental, or by the knife of the surgeon—are those which return the blood immediately to the vena cava, and consequently the blood must all pass through the capillaries of the lungs before being distributed to other organs; and the pus globules or other noxious matters carried to the lungs all become arrested there, so that other organs are but little exposed to this cause.

This theory of the cause of these abscesses has been objected to, because in many cases no inflamed vein can be detected after death. But it has been observed by Arnott and Cruveilhier, "that the effects of purulent phlebitis bear no relation to the size of the inflamed vein," and that the inflamed vein may be very small, or "be within a bone."

The correctness of this theory has also been proven by the experiments of Dr. Saunders, who injected quicksilver into the veins of a dog, and observed that the animal soon had symptoms of thoracic disease which resulted in death; and, upon making an examination, he found that there were numerous small abscesses scattered through the lungs; and in the centre of each he found a globule of mercury.

Now, what is true of suppurative inflammation of those veins which return the blood to the vena cava, is also true of the veins which feed the vena portæ: as surgical operations involving these veins have been observed to be followed by abscesses of the liver.

Experiments have also been made upon these veins by Cruveilhier, who found that the injection of mercury into the mesenteric veins of a dog was followed by the formation of abscesses in the liver.

Admitting the above theory of suppurative phlebitis (the main points of which have been advanced by Dr. Budd in his work on *Diseases of the Liver*) as a cause of abscess of the liver to be true, we are prepared for the consideration of a fourth cause of hepatic abscess—dysentery.

In seventeen fatal cases of abscess of the liver, occurring in the practice of Dr. Budd, and recorded by him in his work above referred to, there was ulceration of the large intestines in ten cases.

Dr. Budd also mentions twenty-nine cases of hepatic abscesses, taken from Annesley's work on the *Diseases of India*, and in twenty-one of these there was ulceration of the intestines, and in two of the remaining eight there were marks of former ulceration.

During the past two years, while a resident physician in the Marine Hospital in this city, in twenty-seven fatal cases of dysentery in which I made *post-mortem* examinations, there were abscesses in the liver in twenty-two.

In fifteen of these cases the dysentery was of a chronic form, and the large intestines in all were more or less ulcerated and thickened. In some of the worst cases there was slight ulceration of Peyer's glands, near the termination of the ileum, and the mucous membrane of the large intestines was most extensively ulcerated throughout its entire extent, while in the less aggravated cases there were only a few small ulcers in the rectum, sigmoid flexure of the colon and cœcum.

The abscesses in these cases were fewer in number, but larger than those observed in the acute form, and had a wall of lymph built around them of more or less thickness and density.

In the acute form the mucous membrane of the large intestines was in several cases almost entirely destroyed by sloughing; the abscesses were not circumscribed by lymph, were quite numerous, and varied much in size, some being so small that they looked like mere drops of pus, while others in the same case were large enough to contain several ounces.

Ten out of the twenty-two cases had been the subjects of intermittent fever, at a longer or shorter time previous to their admission into the hospital with dysentery, while the remaining twelve had not.

I mention this because it is contended by some that these abscesses have their origin in intermittent fever, holding that the frequent recurrence of the chill induces a constant state of congestion of the liver, in consequence of which it becomes indurated, predisposing it to inflammation, and upon the occurrence of which it softens, breaks down, and results in the formation of these abscesses. Now, as there are no valves in the veins which return the blood from the chylopoietic viscera, is it not more probable that this congestion of the liver reacts upon the intestines, and in this way produces diarrhœa and dysentery? and that the abscesses found in the liver have their origin in these diseases of the bowels by their contaminating influence upon the portal blood? That the congestion of the liver induced by the cold stage of intermittent fever does react upon the intestines, and thus give rise to diarrhœa and dysentery, is, we think, established by the almost constant coexistence of intermittent fever and bowel complaints, especially when the former disease has been allowed to run on without interruption for any considerable length of time. And under such circumstances, before the bowel affection can be relieved, it is absolutely necessary first to interrupt the paroxysms of fever.

The two following cases, selected from among the ten out of twenty-two who had been the subjects of intermittent fever, will sufficiently illustrate the foregoing remarks:—

Jacob Roth, aged twenty-eight years, a stout, robust German, deck-hand on a steamboat, was admitted into the hospital September 22d, 1856, with intermittent fever, (tertian form,) the paroxysms of which were arrested by the use of quin. sulph., and he was discharged September 29th, seven days after his entrance in the hospital, and about fourteen from the time that he took the disease. He was again admitted October 24th, with acute dysentery, with which he had been suffering about twelve days. At the time of his admission his features were sunken, pale, and collapsed; had a quick, feeble pulse; frequent bloody evacuations from his bowels, attended with pain and tenesmus; pain and great tenderness upon pressure over the whole track of the large intestines, but complained of no pain in the region of the liver except when firm pressure was made upon it. He died November 8th, fourteen days after his admission in the hospital, and about twenty-six from the time that he was taken sick. In the *post-mortem* examination, the large intestines were found in a sloughing condition, the mucous membrane being entirely destroyed in large patches, leaving the muscular coat entirely bare; the lower portion of the ileum was also inflamed. The liver was a little enlarged, rather darker in color than it normally is, and scattered through its substance there were twenty-three small abscesses, varying in size from that of a pea to that of a walnut; they were not circumscribed by a deposit of lymph. The spleen was a little larger, and also darker in color than it is in its healthy state. The other viscera were healthy. In another case, in which the patient had been the subject of intermittent fever a short time previous to his admission in the hospital with dysentery, and of which he died at the end of two months, the large intestines were one ragged patch of ulceration from the ileo-cœcal valve to the extremity of the rectum. There were seventy-five small abscesses counted in the liver, varying in size from that of a mere point, containing a single drop of pus, to one that contained eight ounces.

About thirty of these abscesses could be counted upon its external surface, having the appearance of little yellow boils under the peritoneal coat; which, when cut into by the scalpel, their contents could be squeezed out, and resembled in appearance the pus of a common phlegmon. The large abscess was situated upon its upper border, and was found adherent to the diaphragm and lung, the lower lobe of which was condensed and also firmly adherent to the diaphragm. The larger abscesses in this case were circumscribed by a thin cyst of lymph, while the smaller ones had none, or at least, if they had, they were so thin that they could not be seen. That these abscesses were not consequent upon the softening of tubercles was very evident, as there were none in a crude condition, and none in the lungs or other viscera. Now, if these abscesses were consequent upon the softening of a previously indurated condition of the liver, the result of ague, why did it begin to soften at so many points? and why this coincidence with dysentery in so many cases, and how are those cases to be accounted for in which the patient had never been the subject of intermittent fever? As an illustration of those cases which had never been the subjects of intermittent fever, I will note briefly the history of two cases:—

CASE I.—William Kirkendall, aged twenty-three, a cadaveric looking individual, entered the hospital July 20th, with dysentery of three weeks' standing; features were sunken; tongue red and inclined to be dry; pulse small and frequent; tenderness upon pressure over sigmoid flexure of colon and cœcum; no pain or tenderness in the region of the liver; evacuations were fetid, mucopurulent, and attended with much tenesmus. Was treated with astringents, opiates, terebinthinate emulsions, injections, etc., but obtained no permanent relief, and died August 6th.

Post-mortem appearances.—Body extremely emaciated; the ravages of ulceration were most extensive, particularly in the rectum, sigmoid flexure of colon, and cœcum. (I should remark, that in the above points the destructive process of ulceration or sloughing was much aggravated in many cases, probably on account of a stasis of accumulated matter in these sac-like portions of the intestines, and by their irritating properties favoring the process of ulceration and sloughing.) The liver contained eight abscesses, averaging in size that of a walnut, and were circumscribed by a thin cyst of lymph.

CASE II.—Garret Gordon, aged twenty-nine, an Irishman, of robust habit, presented himself at the hospital August 21st, with acute dysentery, for which he had been under treatment ten days. Tongue furred, red at its tip and edges; frequent pulse; almost constant sero-sanguinolent discharges from bowels, which were very distressing, and complained of pain when pressure was made upon any part of the large intestines, also of pain in the region of the liver. Treatment same as in former case, with the addition of cut-cups and blisters to abdomen, and a free use of injections. Obtained only transitory relief, and died September 3d.

Post-mortem.—The mucous membrane of the large intestines had almost entirely sloughed off throughout its entire extent. The liver was somewhat congested, and its substance was thickly studded with little abscesses, from the size of a pea to that of a hazlenut; other viscera healthy.

Although in the greater number of cases of dysentery followed by hepatic abscess that have fallen under my notice the symptoms of the latter were well marked, yet in many, as has been seen in the above-reported cases, there were no symptoms by which the latter complication might be diagnosticated prior to the death of the patient. And I am convinced that in the treatment of dysentery, if a knowledge of the frequency of abscess of the liver as a secondary affection, coming on in the course of the former disease, is not had, and consequently not guarded against by treatment, that it must occur much more frequently and go on to a fatal termination without its existence ever being discovered.

In an investigation of this subject, it will be found that if we take the aforementioned seventeen cases, in which the state of the intestines were noticed by Dr. Budd, together with the twenty-nine taken from Annesley, and add them to the twenty-two cases that I have examined, we have sixty-eight cases of hepatic abscess; and in fifty-five of these there was ulceration or sloughing of the mucous membrane of the large intestines.

The great frequency with which I have noticed the connection between ulceration of the intestines and hepatic abscess, the character of the abscesses themselves, the fact that in every instance the bowel affection preceded the abscess, and that they were found exclusively in the liver, seem to justify the following conclusions:—

1st. That those abscesses of the liver found associated with dysentery—hitherto considered as a mere coincidence of these diseases—have their origin in some contamination of the portal blood, (as Dr. Budd says, work on *Diseases of the Liver*, p. 94,) "by pus formed by suppurative inflammation of one of the small intestinal veins; or by matter of other kind resulting from softening of the tissues; or by the fetid gaseous and liquid contents of the large intestines in dysentery, which must be absorbed and carried immediately to the liver."

2d. That this association, or, more properly, this complication of hepatic abscess with dysentery, is of far more frequent occurrence than has been generally supposed.

3d. That ulceration and sloughing of the mucous membrane of the large intestines in dysentery is a far more prolific cause of abscess of the liver than all others combined.—*St. Louis Medical and Surgical Journal*, November, 1857.

2. VICARIOUS SECRETION OF THE URINARY CONSTITUENTS FROM THE SKIN, FOLLOWING SECONDARY PAPULAR SYPHILIS, AND PROFUSE SPONTANEOUS PTYALISM; RECOVERY. By *Mr. Marsden*, of the Royal Free Hospital of London.—The peculiarity in the case which we record on this occasion—the notes of which were taken by Mr. W. Curran, house-surgeon to the hospital—is, that profuse ptyalism set in, no mercury having been given, and a vicarious elimination of some of the elements of the urine from the entire cutaneous surface. "Metastatic Alternation of Function" was the heading of the case as expressed by Mr. Curran, but we cannot recognize altogether such a distinction. The word "metastasis" is generally employed to express the translation of a disease from one part of the body to another; but when we desire to convey a translation of function, by which we mean the occurrence of a secretion in one part of the body instead of another, we employ the term vicarious action, or secretion—*secretio vicario*, derived from the word *vicis*, change place.

Many singular examples of this kind present themselves to our notice periodically, and, doubtless, are familiar to most physicians. The patient, in the present instance, was a young woman, aged twenty, who was admitted, with secondary syphilis, characterized by the presence of a well-marked papular eruption. After being in hospital a short time, it was noticed she had an increase in the flow of saliva, with enlargement of the sub-maxillary and sublingual glands, and swelling of the face. This condition spread to the neck and its glands, and profuse ptyalism was present. The urine had become scanty, and of low specific gravity; and it was observed that the breast, skin, and body generally possessed a well-marked urinous odor, which strongly impregnated the bed-clothes. Here, then, was the elimination of the urinary elements from the gastro-pulmonary mucous membrane and the entire integument, vicarious upon their diminution in the kidney itself. The explanation of such phenomena is, at the best of times, conjectural; and it is really difficult to give a satisfactory one. The balance in the equilibrium of secretion was restored by the use of iodide of potassium and bark, and the salivation was reduced by alum gargles. The same cause which induced the ptyalism most probably brought on the cutaneous urination. One of the actions possessed by iodide of potassium, similar in some respects to the nitrate and chlorate of potass, is that of a diuretic; in small doses, and thus acting upon the kidney, a normal state of things ensued.

We are all well aware that there is a disposition to ptyalism sometimes accompanying pregnancy. It is occasionally seen in certain diseases, such as scurvy, hysteria, some states of mania, and hydrophobia. In this last disease the patient spits incessantly. Possibly the ptyalism in the following case, by whatever cause produced, may have influenced the vicarious secretion of the urinary constituents by the skin. The following quotation from the fourth edition of Carpenter's *Physiology*, p. 622, will supply the student with information and references in relation to this curious phenomenon :—"For it seems to be established by a great mass of observations, that urine, or a fluid presenting its essential characters, may pass off by the mucous membrane of the intestinal canal, by the salivary, lachrymal, and mammary glands, by the testes, by the ears, nose, and navel, by parts of the ordinary cutaneous surface, and even by serous membranes, such as the arachnoid lining, the ventricles of the brain, the pleura, and the peritoneum. A considerable number of such cases was collected by Haller; many more were brought together by Nysten; more recently, Burdach has furnished a full summary of the most important phenomena of the kind, and Dr. Laycock has compiled a valuable collection of cases of urinary metastasis occurring as complications of hysteria."

Ann G——, aged twenty, a dull, pasty-looking girl, of heavy, sombre aspect, and strumous habit, was admitted about the latter end of April, suffering from sores on various parts of the body, partly the result of syphilis, and partly dependent on other causes: she states that she has followed the life of a street-stroller and practiced prostitution during the last three years,. during which time she has frequently been obliged to sleep out a good deal at night. She used at times to drink to excess, and therein abuse herself and her health, which latter is now in a very shattered and weakly condition, and has been progressively on the decline for the last twelve months, when she first complained of any soreness or discharge. She had no bubo at the time, but noticed several small irregularities on the inner surface of the genitals, and subsequently was troubled with the itch, of which she fancies the present sores are the remains. Is not very intelligent or communicative, and seems unwilling to enter into details, but confesses that she lived indifferently, though she never wanted necessaries; and that some months ago her attention was called to a few small circular, reddish papules, which, appearing first on the face, soon assumed a mixed sandy color, which subsequently changed to dark blue, and became more prominent, crusty, and painful. On or about the 6th of June, having been previously on stomachic and tonic medicine, with porter and nutritive diet, it was observed that the flow of saliva was increased, and the neighboring glands enlarged, tender, and puffy. There was also considerable tumefaction and œdema of face, with some lividity, anorexia, and febrile heat; these were soon followed by swelling, pain, and turgescence of the neck and its glands, copious discharge of saliva, and other indications of profuse ptyalism. The urine was reported to be scanty, irritating, and altered as to color; slightly flocculent, of low specific gravity, 1·008, somewhat acid, but free from albumen; the breath, skin, mammæ, and other parts of the body smelled freely of this fluid, and the clothes and bed gave out a urinous odor. She was ordered a simple alum gargle, and a mixture of bark and iodide of potassium, and in a few days was considerably better, and is now (June 27th) quite free from uneasiness or other unpleasant symptom referrible to these parts. — *Lancet*, Nov. 21, 1857.

3. CASE OF ILEUS, WITH OPERATION, BEING AN EXTRACT FROM A PAPER ON INTESTINAL OBSTRUCTIONS. Read before the Glasgow University Medical Society, December, 1856. By *T. M'Call Anderson*.—Mr. R., aged thirty-two, had long been subject to confinement of the bowels, which he invariably relieved by a little opening medicine. However, on the 16th of May last, suffering from constipation, he took a colocynth pill and seidlitz powder, which failing to produce any effect, medical advice was called in. Various laxatives were tried, including repeated doses of croton oil, and of calomel and opium, accompanied by turpentine and assafœtida enemata, but ineffectually. The constipation at this time was the most prominent symptom. The abdomen was tympanitic, and there was slight hiccough, but he had little pain, sickness, or vomiting. This was on the 20th of May. In the evening, however, he vomited some dark-colored matter. On the 22d, enemata of tobacco were three times employed, which produced sickness and vomiting of the contents of the stomach, which smelled distinctly of the injection. Enemata of croton oil were also made use of—a mode of administering this powerful purge which I believe to be new, but which did not produce the desired effect.

On the 29th, nine ounces of fluid mercury were administered, to try its effect in forcing a passage by its weight. It may be mentioned that, at the time this was given, little confidence was placed in its efficacy by the medical men in attendance. No effect followed its use, and the pillæ carbonatis ferri saccharisatum was then had recourse to. This was given as a tonic, on the supposition that the obstruction might be owing to atony of the gut; but this was not the cause of the complaint, as the result showed it produced no effect.

Almost daily attempts were made to relieve the bowels by the long gum-elastic tube, which seemed to pass into the colon, but probably doubled on itself. On the first of June a gutta-percha tube was introduced; and on withdrawal, it was filled with a feculent-looking matter; but whether it was fæces, or matter discharged from the diseased bowel, it was impossible to say. The tube was repeatedly employed, but gave no further insight into the nature of the case, and no relief to the patient.

During the whole of this period the patient complained of no pain and no uneasiness, except what arose from the abdominal distension, which was considerable. His pulse varied from 84 to 96. Every medicine which had the least prospect of giving relief having been tried, the case was now clearly beyond the skill of the physician, and required the use of the knife. Accordingly, after consultation, an operation was agreed upon; and as the opinion was that the disease most probably lay in the sigmoid flexure of the colon, the seat of operation was on the left loin. On the 11th of June, twenty-seven days after the commencement of the obstruction, the following operation was performed by Dr. A. D. Anderson:—

The patient being put under the influence of chloroform, and being laid on his right side, at the edge of the bed, an incision was made an inch and a half above the crest of the ileum, commencing at the external margin of the erector spinæ muscle, and extending outward for about four inches. First the integument and fascia, and then layer by layer of the muscular walls were successively divided, and the descending colon was easily reached. A thick ligature was passed through it; it was drawn out and opened. At the first nothing but flatus came away; but soon after, a copious stool of half-liquid fæces, to the extent of a wash-hand basinful, was discharged. The margin of the opening in the gut was then secured to the edges of the wound, and a binder was applied round the abdomen, to support it after its distention; an aperture being left opposite the wound, which was covered with a light water-dressing. The patient was under chloroform the whole time, and said he had felt no pain; was relieved by the operation, and was comfortable. An opiate was given an hour after, and in the evening he had a good sleep, and free evacuations through the opening. Pulse 108.

On the 15th suppuration had separated the wound, but it was easy; copious stools passed without pain, and containing the crude mercury. On the 2d of July, twenty-one days after the operation, he had quite recovered from its effects, was sitting comfortably in the parlor, and all was going on well. On the 13th, however, he was suddenly seized with rigors; acute peritonitis set in, and he never rallied, but gradually sank, and died on the following morning.

On *post-mortem* examination, a malignant tumor, of a colloid character, was found at the sigmoid flexure of the colon, which proved to be the cause of the obstruction; and in the cavity of the pelvis, in close proximity to the tumor, a quantity of pus was found, which had been discharged from it, and which was the immediate cause of the fatal termination.*

Such, then, was the lamentable result of what at one time promised to be a highly successful case, and it need hardly be said that the patient's death was equally sudden and unexpected. But this need excite no surprise, since the *post-mortem* examination showed that he was laboring under a fatal complaint. The operation, although it did not save the patient's life, certainly prolonged his days, and was clearly indicated. This operation, which was proposed by Callisen, and first performed by Amussat, is an easy and safe one. There should be little hemorrhage, and the peritoneum should not be wounded, the colon being here generally uncovered by it; and it is much more likely to prove successful, and much less likely to come to a fatal termination, than the similar operation on the small intestines, where the peritoneum is unavoidably wounded, and where peritonitis is the almost inevitable result.

In conclusion, let us glance at these obstructions in a general way. Many may think with me that these cases are very rare, and not of every-day occurrence; but we have the authority of Mr. Phillips for stating that they are far more common than we can at all conceive. He has collected the results of no fewer than 2,392 *post-mortem* examinations, and he finds that in these were twenty-two cases of intestinal obstruction; or according to him—"such obstructions are observed once out of every hundred *post-mortem* inspections." Such, then, is the importance of these cases in point of frequency. Let us now look at them in point of fatality. Mr. Phillips has collected the results of one hundred and ninety-six cases, and he finds that the enormous number of one hundred and thirty-three proved fatal—that is, thirty recovered, or only one out of every five. They are, therefore, most difficult of treatment, and still more difficult to bring to a successful termination.

And lastly, as regards the treatment by operation, we find that, out of forty-four cases in which an operation was performed, fifteen were successful, or one out of every three; so that here the proportion is better than in the last case, where we included every kind of treatment, and is, therefore, in favor of operation. But while this average shows that treatment by operation is good practice, no one will be so foolhardy as to attempt anything of the kind till he has tried all the resources of the pharmacopœia, and that without avail; or till he has ascertained the probable nature of the disease, and that it is irremediable by medical treatment. Then, having satisfied himself that nothing will save the patient but an operation, the sooner he does it the better; for not only is the patient more able, in the earlier stages of the disease, to bear the shock of an operation, but the parts are in a better state; inflammation, sloughing, and other evils, have had less time to set in; and he is then much more likely to bring the case to a satisfactory conclusion.—*Glasgow Med. Journal*, Oct. 1857.

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* The preparation is now in the Museum of the Glasgow Royal Infirmary.

Editors' Table.

QUACK ADVERTISEMENTS IN RELIGIOUS NEWSPAPERS.

"While thou so hotly disclaimest the devil, be not guilty of diabolism."—SIR THOMAS BROWNE'S Christian Morals.

It is painful to believe that there should be editors of religious newspapers who, while upholding the great truths of the gospel, and expatiating on the beauties of uprightness, justice, purity, and disinterestedness, are ready at the same time, by a singular and inexplicable inconsistency, to give currency to falsehood, fraud, hypocrisy, and venality, in the quack advertisements which disfigure and disgrace their columns. Eros and Anteros, topaz and ebony, the good and evil principle, the spiritual and the corrupt, are brought together in forced conjunction, and are thus made to appear as if they were fit company the one for the other. An imaginative person might see in these newspaper practices a type of man's double nature, and a lesson accordingly; but we must earnestly protest against such lessons, as they carry with them a moral taint, and are damaging to man's health—they impart a knowledge of evil, but without that of any good to redeem it. The mendacious compounders, venders, and advertisers of nostrums and panaceas lay bare, in their descriptions, all the infirmities and diseases to which the human body is subject, but in such a style of exaggeration and perversion as to alarm and disgust; and they are most pleased when they produce this effect, as on it depends their success in extracting money from their victims. Between their promises and realization there is an impassable gulf, wider even than between fact and fiction; for, while the latter is a fanciful imitation of the former, their promises are entirely out of the line of fulfilment.

On what grounds do these leech-empirics receive the patronage, for it amounts to this, of many of the clerical brethren who conduct newspapers; and it may as well be said, also, of many more who are not connected with the press, except, indeed, so far as relates to the publication of their certificates in favor of empiricism and imposture? Quacks, on the score of intellect and education, may be divided into two classes: One, and it is the most numerous of the two, consisting of the ignorant and the illiterate, who are too stupid or too lazy to follow any regular course of honest industry; the other, composed of those who have been unsuccessful in honest callings, and who, becoming desperate, take to the great field of quackery, as others have done to the high-road and the high-seas, where they became robbers and pirates. There is this essential difference, however, between the quack and the robber or the pirate; that, while both parties are intent on emptying the purses of those whom they encounter, the former pursues his vocation with the cant of benevolence and disinterestedness in his mouth, and although he may kill his dupes by the administration of his nostrums, he is careful not to expose his own life; whereas the latter frankly avows his purpose, and at the very time that he takes the life of any one who resists him, he exposes his own without hesitation.

It is universally admitted, that, for a person to be able to repair a machine of any description, whether it be a watch or a steam-engine, which has been broken, or otherwise disordered in its movements, he must have been previously acquainted with the several parts of this machine, and the manner in which each of them is connected with, and acts, and is acted on by the other parts. The human body, with its complicated mechanism, offers no exception to this plain common sense axiom; but, on the contrary, in studying it we are required not only to make ourselves acquainted with its mechanism, so far as this can be explained on the principles of physics, but also with the additional and paramount offices of a vital and peculiar kind, which come under the head of physiology, and which cannot be understood without a close observation of the structure of the organs of the body, and of the modifications impressed by all the external causes continually acting on it—such as air, food, etc. Do the quacks, who profess to cure all diseases, or even any one disease in all its stages, bring with them a knowledge of this kind? We are safe in asserting that not one in fifty of their number is acquainted with the mechanism of the heart and the circulation of the blood; and still less with the composition of this vital fluid, which they so generally assert to be the seat of disease, and for the purification of which they boast of their having found the secret. They know not the process by which food is converted into blood, nor those others by which this blood is made to nourish and build up all the organs, nor those again by which it is relieved by the extrication of gaseous and other substances, the retention of which would derange and finally arrest all the movements of the animal economy. How can it be expected or believed that these impudent pretenders, who are ignorant of the constituent parts of the blood, can tell which of these is in excess or deficient; which of them imparts the red color that gives the glow of health; which to nourish the organs; which to pass through them and be discharged as secretions from various emunctories. And yet these persons boldly claim to have a knowledge of means—peculiar and secret remedies discovered by and only known to themselves—by which the blood of the sick can be at once purified and enriched! Stranger still, these cheats find ready advocates and vouchers in the members of the sacred profession, teachers of gospel truth, and sticklers for the right at all hazards! The age of miracles has passed away; but yet our reverend expositors of the biblical records can persuade themselves, and try to persuade others, that men who but yesterday left the workshop, or the factory, or the farm, ignorant, often stupid and illiterate, are able at once, without any preparation or learning, to look into the complicated organization of the human body, to measure all its derangements, and to restore it to its healthy condition by the administration of substances which are either inert, or which have been used for centuries before by regular physicians. Years of patient thought, careful observation, and laborious research are deemed indispensable conditions for the votaries of medical science to gain even a partial insight into the mysteries of disease; and, after all, they feel that the difficulties which obstructed their path are very imperfectly overcome, and that they can do little more than furnish a good standpoint for the further progress of those who come after them. It is not so with the self-sufficient, suddenly-inspired quack, who, like Minerva, sprung from the brain of Jupiter, is in full panoply, ready for every emergency; no problem too abstruse, no mystery too obscure, but that he can solve the one and illuminate the other. The annals of science, literature, and the arts abound in examples of men eminent in these departments, and in the subdivisions of each of them, who had to contend against poverty, the want of early education, and of opportunity; but none of these men ever reached his eminence at a single leap; no one boasted that he was an astronomer, and had discovered new planets, simply by looking for the first time through a telescope, even were it a Herschell's or a Rosse's. Fulton did not apply steam to navigation, nor Morse electro-magnetism to the telegraph, by intuition and simply willing it. Powers and Crawford were not able to extemporize, in the first week of their noviciate, those beautiful productions of the chisel that have given them a world-wide fame. Genius has never yet been able to realize its aspirations, nor to furnish material for the world's history, without time, labor, and strenuous and persistent effort. But all the examples of history, all the teachings from analogy and experience in every-day life, are set at naught; and dullness and ignorance, as embodied in quacks, are, by the asseverations of certain of the clerical brethren, to obtain credence for discoveries beyond that of steam navigation and the telegraph, for exhibition of genius surpassing those of the sculptor and the painter.

Does it not sometimes occur to sincere Christians, that their excessive credulity in giving so ready an assent to quackery and its alleged miracles, for such they are if its pretensions and statements have any foundation in fact, furnishes a strong excuse to the skeptic in religion, who, judging of the unknown from the known, of a religious creed from a medical creed, can hardly persuade himself of the soundness of the first when he knows the palpable absurdity of the second; nor can he have a high opinion of Christian morals when he sees Christian men aiding and abetting the impostures and falsehoods of the makers and venders of quack medicines? Is it not to be feared that the skeptic and the scoffer will, in a spirit of plausible induction and generalization, proclaim these reverend gentlemen, who are such strenuous advocates of medical quackery, to be quacks in theology, and pretenders to piety, and taking them as representatives of the entire order, to assert that they are all either the most credulous of men, and, therefore, of no authority as teachers, or the greatest of hypocrites, and, therefore, no exemplars or guides for conduct? Such conclusions are not, we admit, very logical, but they are strictly in the line drawn by the clerical allies and abettors of medical quackery.

A plausible explanation of the opposition to legitimate medicine manifested in the undisguised support of the bastard branch, by the parties just mentioned, was given some years ago in the pages of our cotemporary, the *London Lancet*, when discussing the subject of "Quacks and their Abettors." It remarks, "We really think that the church uses medicine as a kind of safety-valve for doubt and disbelief; or else that it must feel a latent jealousy against science for overturning the miraculous virtues of saints and relics. Certain it is that, after a manner, Physic and the Church, two of the black Graces, are in a state of open war. Reverend gentlemen who are straight-laced in their religious creeds, seem to find comfort in disbelieving all that the profession have to advance in favor of medical orthodoxy. Free-thinking, skepticism, and total unbelief in regular medicine would seem necessary to the weakness of the clerical mind; and its vagaries are spent upon our unfortunate art instead of upon matters of religious belief. Clerical quackery is but a mild atheism or infidelity." In a graver strain, when speaking of the mischievous consequences of clerical abetting of quackery, this journal says: "In the same way that we have given, from time to time, lists of medical testimonials in favor of quackery, we propose to give a few certificates from divines of different persuasions. A very amusing pastime this would be, if we could forget that while clergymen are indulging in their medical buffooneries, the health, and even the lives of thousands of their fellow-creatures are constantly being sacrificed to the Moloch of quackery."

We look upon quack advertisements in papers edited by clerical personages in precisely the same light as similar advertisements in other vehicles, to the tail of which the certificates of clergymen are appended. The company in both cases is the same, and the fellow-feeling of the two parties is equally conspicuous. Their logic is common property, the possession of which no one out of their own circle will dispute with them. If clergymen covet notoriety thus obtained, we might leave them to the enjoyment of their tastes, were we not, on the score of humanity, called upon to deplore the effects of such perversions.

On taking up a quack's "Almanac" we see in the titles of some of his compounds a show of their adaptation to particular classes of diseases; but the temptation cannot in any instance be resisted of claiming for the compound a curative power over all the diseases of an organ or apparatus, whether they be acute or chronic, nervous or inflammatory, hemorrhagic or tuberculous, or whether located in tissues quite different from each other in their structure and vital properties. An expectorant, for example, is formally announced as the remedy in asthma, not only to excite the mucous membrane of the lungs to relieve itself by expectoration, but also, and with equal confidence, in hemorrhage from the lungs, in which we are desirous of keeping this organ as quiet as possible, and of preventing any excitement and movement such as are desirable to produce expectoration. As might have been anticipated, we find certificates of clergymen in favor of the "expectorant," which is announced as a wonderfully curative agent in asthma, cough, and influenza. We are not told whether subsequent attacks of the first-mentioned disease—the most formidable of the three—were prevented by this nostrum. For the relief of the fit or paroxysm, there are scores of remedies, each one of which might claim certificates of its curative powers over a stage of the disease that would have passed away without the use of any remedy at all. Under such circumstances the one last taken will have the credit of the cure, we ought rather to say of a solution of the fit of asthma.

But commend us to the out and out spoken praises lavished by another reverend, first on the "expectorant," for its having been the means, "under God," of keeping him from his grave; ditto on the "alterative," for his wife; then on the "carminative balsam," for taking him, who laid as cold as a corpse, out of the jaws of cholera. Next are mentioned "the sanative pills," which "work to a charm;" but whether on the bowels or the brain—to carry off redundant bile, or to relieve from thick coming fancies—we are not told. The most wonderful wonder, to use the words of the itinerant showman, yet remains in the shape of the "vermifuge," which is the best thing the reverend brother ever found among children for the cure of—worms? no, nothing of the sort—it was "for chills and fever." This feat of killing an object not aimed at, beats even the engineering skill of the famous Todlieben in Sebastapol; and can only find a parallel in the annals of cockney sporting. The zealous certifier tells his quack friend of his having "had formerly some practice in medicine, but abandoned it to become a ——— preacher." It is devoutly to be hoped that his theology rests on a more orthodox foundation than his pathology, and that his preaching is more successful than his physicing; for otherwise his flock cannot be said to feed on pastures green, nor to be safe against wolves leaping into the fold.

Jealous perhaps of the reputation which might accrue to the —— church by some of its members being such successful media for the introduction and working of the "expectorant," the "carminative balsam," the "sanative pills," and the "vermifuge," out comes a brother, of another sect, whose rapid cure shows his transmissive power of the "alterative," for that was the article employed in his case, to go far beyond that of his reverend rival of the other denomination. We learn from his certificate that he was seized in the night, with what he afterward learned was "malignant erysipelas," from which he suffered terribly the next day; but we must give the description of the case in his own words:

"I had retired to bed about eleven o'clock in good health, and fell asleep, but was soon awakened by extreme pain in one hand and arm. I succeeded in keeping my bed until about four o'clock. When I arose I found my head badly swollen and in a high state of inflammation. A small black spot on the back of my hand, about the size of a five-cent piece, soon rotted and came out to the bone. When I arose the pain was very severe, running into my head, and even the whole system. By twelve o'clock my head and face were badly swollen. The glands of my throat swelled very much, and by this time every tooth in my head was more or less loose; two-thirds of the skin of my mouth and lips peeled off; my sight quite affected; no physician near. I solicited my friends to take me home, (fifteen miles,) but they were fearful I could not stand it, when T. R. Davenport, who kept the public-house, requested me to go to his house. Chills, faintness, and sickness were constantly increasing upon me. I had become almost insensible."

The pathologist who reads this marvelous statement will notice the unparalleled rapidity with which the disease ran its course, in the first twelve hours. In this period, alterations of structure took place which commonly require days; in four hours a spot on the back of the hand had become gangrenous, the soft parts sloughed, and the bone beneath was exposed. We sometimes hear of a galloping consumption; but such steam-power racing inflammation is without precedent. After this the desquamation of the skin of the mouth and lips, in twelve hours, though in itself wonderfully rapid, ceases to surprise. But relief soon came in the shape of the "alterative," administered by a kind old lady who met the patient at the store. The dose was a spoonful (tea or table not specified) "and repeated two or three times in the course of an hour, in which time the faintness, sickness, and chills had principally left, a free perspiration was on the surface, and the inflammation fast abating. The third day after I was able to ride home. Dr. Plimpton informed me that the attack was one of the severest kind of *malignant erysipelas*, and that the use of your alterative was the means of saving my life." The grateful certifier ought to have made the whole story complete, by expressing his belief that he was a subject of so extraordinarily violent a case of malignant disease, in order to show the still more extraordinarily curative powers of the nostrum used by him on the occasion. We would not treat with levity any form of suffering; but we have shrewd suspicions that the editor and proprietor of the quack almanac has been hoaxed by some wag's describing as a case of malignant erysipelas in a ——— preacher, the effects of a "free fight" in which some unfortunate wight had been engaged and was "punished" by a big-fisted antagonist. Of one thing we are sure: that, if such a narrative had been written by a medical man, we should have no hesitation in taxing him with having—most extravagantly drawn on his imagination.

After such a miraculous cure as that related by the last-mentioned brother, the cures of cholera ushered into notice under the inspiring auspices of a —— D.D., who had also been president of a college down East and Secretary of the American and Foreign Bible Society, seem stale and flat. We should have expected better things from this gentleman, and a more discriminating "compassion for suffering humanity" than to allow himself to figure in a quack almanac, as an advocate of quackery, under the evils of which humanity is continually suffering. What would he say of a man professedly benevolent and pure-minded who should give his testimony in favor of Mormon practices? And yet this person would not sin more against Christian morality than the reverend brother does against the real interests of humanity and truth, in the testimony which he thinks he cannot withhold, in favor of quackery. Among the "miscellaneous certificates" in the almanac, is one from a reverend professor of theology, who, after praising the nostrums, lauds the maker and vendor of them, and asserts that Dr. ——, with whom he has the gratification of a personal acquaintance, "sustains a high reputation in Philadelphia as a regular and skillful physician." Now we happen to know that the person (Dr. ——) named sustains no such reputation in either of the particulars specified; and that there is no justifiable ground or even a reasonable excuse for the reverend professor going so far ahead of the facts. This is, however, but a specimen of the unscrupulous system of bolstering up quacks and quackery, to which so many of his cloth are prone.

We would respectfully suggest the propriety of the different Christian churches of the land taking order on this subject, and of their laying down the forms of dealing, as the Friends call it, with delinquents, whose conduct perils the dignity, purity, and usefulness of the different religious denominations to which they severally belong. The task would not be at all a difficult one, as, happily, the great body of the clergy, and especially the members of it most conspicuous for their piety, learning, and consistent walk, are, we believe, free from the taint of corruption in this matter; and they cannot but feel aggrieved at the sore not being cleansed.

Certificate-mongers, as well as their friends the nostrum-mongers, will be heard to say, that the medicines lauded by them have cured disease in very many cases. Discounting at a heavy rate the numbers claimed to have been relieved in this way, the remainder furnish no apology, still less justification, for quackery. The nostrums given are either inert or they possess undoubted activity. Under the first supposition, the cures which follow are Nature's cures, and so far no blame would seem to be attached to the nostrum. But there is this serious drawback to a reliance on such a means of medication: it lulls the fears of the sick and occupies their attention during the time when the disease (of the real nature of which they are ignorant) is making progress, and the opportune moment for suitable and active treatment is passed beyond recall. In epidemic, febrile, and some other diseases, the entire success of treatment, and consequently the life of the patient, mainly depend on the physician having an opportunity of prescribing within the first few hours, or at the furthest within the first day, after the attack. Under the other supposition, that the nostrum contains a substance of undoubted power, it is easy to see that, when taken by the patient at the particular stage of the disease in which it is indicated, it may exert a curative action; but as no rule or principle guides in its use, the chances of the appropriate time being lighted on are rare, and consequently the relief obtained must be equally rare, and always uncertain. But what can be anticipated from the effects of an active medicine when it is administered in all diseases and in every stage of disease, without regard to temperament, constitution, idiosyncrasy, or prior infirmities? What but aggravation of disease in the majority of cases in which it is thus indiscriminately administered, and death itself in many of these. Take quinine, or iodine, or opium, or strychnia, or digitalis, or mercury, or arsenic, or even aloes or jalap, as an example, and note down the results of its use when given in the same dose in every case of disease that offers. The very thought must make any considerate and humane man shudder, while he wonders at the perverted reasoning and blunted moral sense of those who prate about its being their duty, for the sake of humanity, to foster, by formal attestations, this wholesale and indiscriminate poisoning which is carried on inevitably by the sale and use of quack medicines. A prominent feature in the code of medical ethics is a strict if not stern prohibition against any physician giving his support, or even countenance, directly or indirectly, to quackery. This prohibition is based on the grounds just stated; and it is sustained and enforced as far as lie in their power by a vast majority of the members of the medical profession in all civilized and Christian countries. It is a part of their moral law, which experience shows to be alike necessary for the protection of the health of the people and for the usefulness and dignity of their own calling.

Happily for the interests of the community everywhere, sound views on this point are entertained by the leading religious journals, whose example ought to be more influential than it has been on others of minor note, which still persist in keeping up the nuisance of quack advertisements. Let us hope that they will all, seeing their error, come to the conclusion expressed in the following manly and benevolent declaration of the *English Evangelical Journal* for Jan. 1845 :—

"We shall cheerfully abandon, in future, the publication of all advertisements of quack medicines, which will be an act of homage to our own taste and judgment, no less than to the strongly-expressed opinion of some of our best friends, who, with ourselves, deeply deplore the disease and mortality occasioned by the nostrums of medical quacks, published daily in this great metropolis." We are glad to adduce at the same time the consistent and correct course, in this matter, of such an able and influential journal as the *New York Observer*, which will not allow of quackery being introduced, even by stealth, into its columns, under the garb of better company, without rebuke.

SOLUTIONS AND DEPOSITS OF MINERAL AND THERMAL SPRINGS. — The water of springs, which, in its subterranean course, had abstracted from the soil and rocks a great variety of substances, and had been penetrated with different gases, parts with some of these, often in considerable quantities, after its issue from the earth and exposure to the atmosphere. In this way, compensation is made by deposits on the surface for the materials which had been carried off by solution in the interior; and the water gives evidence above of the company which it keeps under ground.

The solvent power of water on the different earths, as they are combined in rocks, is much greater than is generally imagined; more especially when it is aided by an elevated temperature, and, also, by the addition of carbonic acid. Drs. W. B. and R. B. Rogers, in experiments made for the purpose, found that by prolonged digestion of the pulverized mineral, such as hornblende, epidole, mesotype, etc., in simple or carbonated water, an appreciable quantity of their constituent ingredients—lime, magnesia, oxide of iron, alumina, silica, and alkali—amounting sometimes to one per cent. of the whole mass, was dissolved. The experimenters found, contrary to common belief, that the carbonate of magnesia is much more soluble than carbonate of lime. They point out the readiness with which magnesia and the calcareo-magnesian silicates yield to the decomposing and dissolving action of carbonated and even simple water. M. Damour, in a paper on the *Thermal Springs of Iceland*, attributes the introduction of silex and alkalies into these waters to the decomposing action of pure water, of an elevated temperature, and, under considerable pressure, in trachytic rocks which serve as their recipient. To the same purport, as illustrating solution and deposit by springs, are the experiments of M. H. de Senarmont, on the artificial formation, by the moist method, of some species of minerals, which may be produced in thermal springs under the combined influence of heat and pressure. Carbonate of magnesia may be obtained by a double decomposition, at a temperature of 320° Fahr., of carbonate of soda and sulphate of magnesia. Carbonate of iron may be the product of the action of carbonate of lime on the protochloride of iron, at temperatures of 273° to 356° Fahr., kept up from twelve to eighteen hours; also of the double decomposition, at 302°, of sulphate of iron by the bicarbonate of soda; and of other double decomposition not necessary to be specified at this time. A great many metallic sulphates are easily prepared, as M. de Senarmont shows, by the moist method in the laboratory. He has procured a bi-sulphuret of iron by double decomposition, at 165° Fahr., of the protochloride of iron and the per-sulphuret of potassium.

There are differences in the readiness of precipitation of sulphurets and carbonates in formations, so that the first are more readily precipitated, and hence form a lower deposit than the carbonates, from waters saturated with the respective gases. As illustrating the changes by double decomposition produced by certain combinations, we might suppose, for example, that waters charged with chlorides of calcium, of magnesium, and iron, should mix, under certain conditions of temperature, and consequently of pressure, with carbonates containing more or less sulphate of soda, and give rise at the same time to deposits of magnesia and lime, and anhydrates of red oxide of iron, and rock-salt. Metalliferous veins are, in the opinion of M. de Senarmont, due to thermal springs. On this point we shall have something to say at another time.

The most frequent and largest deposits are calcareous, which, becoming hard by time and exposure to the air, form extensive quarries, from which the materials for building are procured to any conceivable amount. These may come both from hot and from cold springs, as in the famed rock named *travertin*, by the Italians; out of which the temples, amphitheatres, and triumphal arches of ancient, and the palaces and churches of modern, Rome are built. Of similar material and formation are the deposits which were used in the construction of the temples of Pæstum. Round Guancavelica, in South America, there are many considerable hot springs which yield the calcareous matter that had been held in solution. So strong is the impregnation of the spring-water, that the inhabitants receive it in square boxes or moulds, which are filled in a few days with the matter it deposits, and the blocks thus formed soon become fit material for building, and are used for this purpose.

At the Baths of San Vignone, in Tuscany, at a short distance from Radacofini, and only a few hundred yards on the high road between Sienna and Rome, we see, on a large scale, the petrifying action of carbonated waters, in regions which lie near to the active sources of volcanic disturbance. One of the most striking examples of the rapid precipitation of lime from thermal waters occurs in the hill of San Vignone. The spring issues from near the summit of a rocky hill, about one hundred feet in height. The fundamental rock from which the spring issues is a black slate, with serpentine, belonging to the older Apennine formation.

The water is hot, has a strong taste, and, when not in very small quantity, is of a light green color. So rapid is the deposit near the source, that in the bottom of a conduit-pipe for carrying off the water to the baths, and which is inclined at an angle of 30°, half a foot of solid travertin is formed every year. A more compact mass of rock is produced where the water flows freely; and the precipitation in winter, when there is least evaporation, is said to be more solid, but less in quantity by one-fourth, than in summer. The rock is generally white; some parts of it are compact, and ring to the hammer; others are cellular, and with such cavities as are seen in the caries of bone; they are found in the silicous mill-stone of the French basin. A portion below the village of San Vignone consists of incrustation of long, vegetable tubes, and may be called *tufa*.

A large mass of *travertin* descends the hill from the point where the spring issues, and reaches to the distance of about half a mile east of San Vignone. The beds take the shape of the hill at about an angle of 6°, and the places of stratification are perfectly parallel. One stratum, composed of many layers, is of a compact nature, and fifteen feet thick; it serves as an excellent building-stone. Another branch extends to the west for two hundred and fifty feet in length, and of varying thickness, but sometimes two hundred feet high. It is then cut off by the small river Orcia, which undermines it. The quantity of travertin thus collected is insignificant compared with that which has been carried to the sea since the time when it began to flow.

The Baths of San Filippo, as they are called, furnish one of the most noted examples of deposit. Not many miles distant from the hill of San Vignone, on another, the summit of which is about three miles distant, are the celebrated baths of San Filippo. There are three warm springs here, containing carbonate and sulphate of lime, and sulphate of magnesia. The water which supplies the baths falls into a pond, where it has been known to deposit a solid mass *thirty feet thick* in about *twenty years*. A manufactory of medallions, in basso-relievo, is carried on in these baths, by causing a deposit of the water, freed from travertin and crystals of sulphate of lime, in moulds. The result is a beautiful cast of the figures formed on the mould. A hard stratum of stone, about a foot in thickness, is obtained from the waters of San Filippo in four months. The mass of calcareous deposit which descends the hill is a mile in breadth, in some places attaining a thickness of two hundred and fifty feet at least. The whole length it might have reached it is impossible to conjecture, as it is cut off, like the travertin of San Vignone, by a small stream, where it terminates abruptly.

The *spheroidal structure* in the travertin of this region, like that of the cascade of Tivoli, is of peculiar interest to the geologist. The lamination of some of these concentric masses is so minute that sixty may be counted in the thickness of an inch. Sections are, notwithstanding, exhibited of what might be called perfect spheres.

Other examples of calcareous deposit on a large scale and with picturesque effect—forming in one place lofty mounds, and in another a series of terraces—are exhibited at the thermal springs of Hieropolis, and of Singerli in Asia Minor; also in those of Hammam-mes Koutin in Algeria, and also in New Zealand. From the springs near Lake Oroomiah is deposited the translucent Tabreez marble or alabaster. Vegetable and other bodies immersed for a time in the water of springs thus impregnated receive a calcareous coating and become petrified. So complete is the conversion of a plant, for example, into stone, in this process of petrifaction, by which all its tissues are saturated and every interstice filled up, that, but for its figure and the filaments and lines marking its original structure, it would be no longer recognizable as having ever belonged to the vegetable kingdom.

Hieropolis was the most noted of the cities of Asia Minor for the profusion of its thermal waters and the splendor and embellishments of its baths. It was called by distinction the "Bath;" and the city itself, no doubt with something of Oriental hyperbole, was described as "the most splendid." The calcareous deposit from these springs is so great as to have formed the hill on which the remains of the city stand; and their track, which might be called a petrified stream, is marked by similar deposits, extending several hundred feet into the plain beyond. As this flowed down the hill, the waters met with just interruption enough to form, by their deposits, a succession of terraces, suggesting the idea of an amphitheatre. In another direction, where the side of the hill is more precipitous, the eye is arrested by one continuous snow-white street, which bears the appearance of a solid cataract sixty to seventy feet high and a hundred and fifty feet wide. One traveller (Hamilton) tells us that in front of what was once the theatre, at the bottom of a large pool into which the waters of the springs flow, he could distinguish traces of a colonnade of beautifully fluted columns, as perfect as when they were first thrown down. They probably, he adds, once surrounded the sacred fountain, and now look like the ruins of a naiad's palace. The striking appearance presented by these calcareous deposits has caused the Turks to confer on Hieropolis the name of *Pambuk-kelesy*, cotton castle.

The Tabreez marble is deposited from warm carbonated springs on the east side of Lake Oroomiah, which is about forty-five miles distant from Tabreez, the capital of Azerbijan, the northwesternmost province of Persia, and not far from the Caspian Sea. It is the most important commercial city of Persia, and the great mart for European merchandise. The waters of the lake are among the most saline in the world, containing, as they do, substances coming under this head to the amount of 22·5 per cent. The chief calcareous deposits occur within half a mile of the town of Maraha, which is ten miles east of the lake. The Tabreez marble, or alabaster it might be termed, is of a yellowish, running into a light blue color, very compact, and so translucent that it is used, when cut into thin slices, as a substitute for glass in the windows of baths and other edifices. Cold and thermal carbonated springs, containing both lime and soda, abound on both sides of Lake Oroomiah. Sulphur and salt springs are also met with in this region. The Rev. Mr. Perkins passed one great quarry within a few rods of a spring from which vast quantities of this marble have been taken. This quarry is but little above the level of the lake, and is about half a mile distant from its eastern shore.

Siliceous deposits, implying the previous solution of silex, are chiefly seen in volcanic districts, as in Iceland, St. Michael's, one of the Azores, etc. Pure water, at the boiling point, (212° Fahr.) acting on palagonite, the chief constituent of which is silex, dissolves this latter, or rather the silicic acid, as Bunsen ascertained, and also potash and soda. When the water was heated with carbonic acid and allowed to act on pulverized palagonite, all the constituents of the latter, with the exception of alumina and oxide of iron, were dissolved in the form of bi-carbonates. M. Eugene Robert found, that on comparing a specimen of unaltered phonolithe of the mountain of Langarfrall, not far from the great Geyser, with another that had been exposed to degradation and decomposition, the former contained 72·3 per cent. of silex, and the latter only 65·8 per cent. The difference shows the proportion of silex abstracted and dissolved. This last process is accomplished either by the high temperature of the water, which is sometimes as high as 124 C. = 255° Fahr., as in the Geysers, or rather, as M. Dumas thinks, the change is produced by the repeated action of the watery vapor, which escapes from the spring against the heated sides of the reservoir. It has been suggested that alumina may be liberated from argillaceous rocks by a similar process. A still larger solution of silex in water is obtained by the intervention of an alkali, commonly soda, more particularly when a high temperature is not necessary. The volcanic rocks near the Geysers are chiefly silicates.

Sometimes the deposit consists of a mixture of a carbonate and earthy silicate, with oxide of iron, as in that from the spring of St. Allyre, at Clerment. It forms a large part of the soil in one quarter of the city, and has furnished the material for a natural bridge over a small river close by. In Iceland and St. Michael's, petrifactions of vegetable products, formed by the incrustations of siliceous matter, are readily seen in all stages, from the soft state to a complete conversion into stone. The siliceous formations by deposits on the surface of the earth are inconsiderable, but it has been conjectured that a much larger quantity is furnished by springs under the ocean, and that this latter is overlaid far and wide by layers of nodules of silex, and thus interstratified with shelly and calcareous deposits which may be forming there, or with matter derived from wasting cliffs or volcanic ejections. The water of the thermal siliceous springs in Iceland, as at the Geysers more particularly, forms a basis at the point of issue the margin of which becomes the seat of evaporation and the consequent precipitation of silica, and is gradually raised by successive deposits of this kind, which also occur on the surrounding surface as the water overflowing the margin spreads itself around. In this way the Great Geyser has heaped up a flat cone of siliceous tufas and sinters to the height of twenty-five or thirty feet, and with a diameter of three hundred. The basin, at its summit, measures at its edge sixty feet in diameter and six or seven feet in depth. The pipe or tube of the basin through which it now receives the water from below is, at its point of junction with the latter, about ten feet in diameter, and has a perpendicular descent of seventy feet.

Iron pyrites has been observed, as a deposit from some thermal waters. Calcareous sulphurets and sulphur, with alumina, are also deposited from thermal sulphureous waters. They make up with baraine what is called mineral mud, which, in proximity to the spring, is used as a kind of bath. Petroleum is occasionally deposited from certain springs, to which Lyell refers the bituminous shales present in geological formations of different ages.

A DISH FOR INVALIDS.—Sterne, in a postscript to one of his letters from Montpelier, tells his friend, —"My physicians have almost poisoned me with what they call *bouillons refraichissants;* 'tis a cock flayed alive and boiled with poppy seeds, then pounded in a mortar, and afterward passed through a sieve. There is to be one crawfish in it, and I was gravely told it must be a male one,—a female would do me far more hurt than good."

COFFEE IN THE TURKISH FASHION.—Commonly, at least in Europe and in this country, the French method of preparing coffee for a beverage is deemed the best. Travellers in the East assure us, however, that coffee *á la Turque* is preferable to all, although at first it is not relished as much as when made in the common way. A late French traveller in Greece gives his vote in favor of the Oriental side of the question, and, at the same time, directions for preparing the Turkish coffee. We translate the former for the benefit of our untravelled readers, who may wish to make the trial of a little variety in their favorite morning beverage.

Roast, but without burning, the fresh or green berries; then reduce them to an impalpable powder, either in a mortar or in a suitable mill. Water is to be put on the fire and allowed to remain until it boils, when it is taken off, and to every measure of a coffeecupful there is to be added a small (tea) spoonful of coffee and the same quantity of powdered sugar, which are to be carefully stirred up together. The coffee-pot is again put on the fire until it boils up; it is then taken off, and once more replaced on the fire, after which it is removed, and the coffee now prepared is to be quickly poured into cups for immediate use. Some amateurs have it boiled five times; but three is deemed sufficient by the best judges. A skillful server will take care that each cup shall receive its share of the foam or bead which is formed on the surface of the contents of the coffee-pot.

When the coffee is ready, one is free to drink it hot and thick, or cold and clear. The gourmets swallow it at once, without waiting; but they who drink it after it has settled, do not omit to gather up the sediment with the little finger and swallow it, that is the sediment, with evident relish. It is asserted positively that coffee thus prepared may be taken without inconvenience ten times in the day, whereas one could not take coffee made in the French fashion five times in the same period. It is a Frenchman who utters this opinion, and we may suppose him to be impartial on the occasion. We should be sorry, however, even with all its reputation for mildness of effect, to see Turkish coffee used a tithe of ten times, by persons with an excitable condition of the nervous system, or who suffer from cardiac irritation.

The writer (M. About) here referred to says that it is a mistake to suppose that the people of the East drink coffee without sugar. In the chief coffee-houses of Athens it is served with sugar, and in the inferior ones of that city it is sweetened in advance.

Both at Smyrna and at Constantinople it was always brought to him too much sweetened.

A BRIGHT PICTURE.—Drunkenness, so common in cold climates, is a very rare vice among the Greeks. They are great drinkers,—but it is of water. They make it a point not to pass a fountain without drinking from it, and if they enter a *cabaret*, or wine shop, it is to talk. The Athenian coffee-houses are full of people, at all hours; but there customers do not take strong drinks. They indulge themselves in a cup of coffee, which costs a cent, or in a glass of water, and fire to light their cigarettes, or in a newspaper, or a game of dominoes. These are their indulgences for the day. M. About did not see, in a period of ten years, a man dead drunk in the streets; and he believes that it would be a very easy matter to count all the drunkards in the kingdom of Greece.

What a load of business would be removed from our criminal courts and executive labor from our police force, not to speak of the saving to the public treasury and of the public health, if there were even an approach to this state of sobriety in the several commonwealths of our great Union.

JENNER MONUMENT.—It will be remembered by many of our readers that several years ago subscriptions were made in this country for the purpose of erecting a monument to Jenner, the illustrious discoverer of vaccination. The history of the accumulation of funds wherewith to defray the expenses of this merited tribute is interesting to us as Americans. When it was proposed in England to erect a monument to the memory of this distinguished physician and philanthropist, it was suggested that, as it might be an object of universal interest, the people of all nations would gladly contribute; aid was accordingly solicited from the United States, and the appeal was so much more cordially responded to in this country than in the one in which the movement originated, that it may be truly said that the Jenner Monument in London is essentially an American tribute, which the English people have assisted in paying to an English celebrity. Of the whole sum collected some time ago, *three hundred and forty pounds* were transmitted from America—*one hundred and twelve pounds* from the Philadelphia committee; and in the country of his birth, but *one hundred and ninety-six pounds*, including *twenty-five pounds* from the Prince-Consort.

The following letter exhibits the present financial condition of the undertaking, and gives satisfactory assurances that the work has been properly performed:—

LONDON, 24th November, 1857.

SIR:—The Committee have great pleasure in informing you that the statue of Dr. Jenner, by Mr. Calder Marshall, R.A., has now been completed in bronze, and that it is most satisfactory both as a likeness and a work of art.

They have also much gratification in announcing that her Majesty's Board of Works has graciously granted them a most eligible site in Trafalgar Square, and that they have been enabled to enter into a contract for the furnishing and erecting of the pedestal within four months, at a moderate cost.

The Committee, however, regret to add that their funds are still scarcely sufficient to meet the necessary outlay. They have, in consequence, resolved that the subscription lists shall continue open until the 1st of February next, on which day they will be finally closed.

It is requested that all unpaid subscriptions may be transmitted to Messrs. Coutts & Co., or to the Hon. Secretary, No. 5 St. Mark's Crescent, Regent's Park, London.

I remain your most obedient servant,
GEORGE VERE IRVING,
DR. ROBLEY DUNGLISON. Hon. Secretary.

BIOLOGICAL SOCIETY OF PHILADELPHIA.—It gives us great pleasure to be enabled to announce the formation of a society in this city with the above title. Though we have no lack of medical societies in the United States, we are not aware that any exists having for its object the cultivation of biological science in its most enlarged sense.

The scope of action of the Biological Society of Philadelphia will be similar to that of the *Société de Biologie* of Paris. It will be pre-eminently a working society, and will endeavor, by encouraging original investigations, to enlarge our knowledge of the laws and conditions of life. The subjects which it is especially intended to cultivate are Physiology, Pathology, Microscopy, and Organic Chemistry. The society already numbers some of our most able and energetic men among its members, and will, we doubt not, succeed in the objects which have led to its formation.

In our next number we will announce the names of the officers.

WE have received from Dr. N. D. Benedict, of Magnolia, East Florida, a circular letter descriptive of the winter retreat for invalids, which he has had in operation at that place during the last two seasons.

Magnolia is upon the St. John's River, twenty-five miles south of Jacksonville, and readily accessible three times a week by comfortable steamers, in about thirty hours from Savannah. The house opened by Dr. Benedict is large and comfortable, having been expressly designed as a *maison de santé;* and the climate of that part of Florida is admirably adapted for those the state of whose health—whether from threatening of pulmonary disease or other affections—makes it desirable that they should avoid the rigors of a Northern winter.

WE have received the prospectus of a new journal about being commenced in Paris, under the editorial supervision of Dr. E. Brown-Séquard, entitled "*Journal de Physiologie de l'Homme et des Animaux.*" It is surprising that this should be the first journal published in France whose pages are devoted solely to this interesting and progressive branch of medical science; and Dr. Brown-Séquard's zeal and industry, and his world-wide reputation as a physiologist, will be a sufficient guarantee of the value of this journal. He will be assisted in his editorial labors by Drs. Ch. Robin, Ch. Rouget, and Tholozan, with the promise of full and original communications from many distinguished physiologists in Germany, England, and America.

This journal will treat, besides pure physiology, of—

1. Organic Chemistry, hygiene, toxicology, and legal medicine, in their relations to physiology.
2. Descriptive anatomy, comparative anatomy, teratology, and normal and pathological histology, so far as they may be connected with physiology.
3. The application of physiology to the practice of medicine, surgery, and obstetrics.

The numbers will be issued four times a year—on the first day of January, April, July, and October—each number containing about 200 pages.

The contents will be classified in the following manner:—

1. Original communications, forming more than one-half of each number.
2. Articles published abroad, entire or in part.

3. Critical analyses of books published in France and other countries.

4. Accounts of the progress of physiology in France and other countries.

The subscription price in this country will be twenty-five francs, or $5 per year.

American authors who wish to have their works reviewed, or those sending original communications, will please address, *post-paid*, M. J. B. Baillière et Fils, or Dr. Brown-Séquard, Rue du Dragon 16, à Paris.

CHANGES IN MEDICAL JOURNALS.—The proprietorship of the *New Orleans Medical and Surgical Journal* has passed into the hands of Drs. W. Stone, J. Jones, and S. Chaillé, who have also become assistant editors, Dr. Bennett Dowler retaining the position of editor-in-chief.

The *Medical News and Hospital Gazette* has also undergone a change in its management, and is now edited by Drs. D. W. Brickell and E. D. Fenner. To the latter, we believe, belongs the credit of having been the first to establish a medical periodical in the Southern Metropolis.

Dr. A. P. Merrill has resigned the charge of the *Memphis Medical Recorder* into the hands of Samuel F. Wright, M.D.

BOYLSTON PRIZE ESSAYS.—The premium for the best essay on "The Pathology and Treatment of Diseases of the Urinary Organs," has been awarded to Dr. W. W. Morland, of Boston; and that for the best elucidation of the question, "Under what circumstances do the usual signs furnished by auscultation and percussion prove fallacious?" to Dr. E. Cutter, of Woburn, Mass. Considering the high standing of the two successful competitors, we anticipate much pleasure and profit in the perusal of their respective dissertations.

CHOLERA.—This terrible scourge is again upon its westward course, and has already reached the suburbs of London. The Metropolitan Board of Health has issued a circular calling attention to the various sanitary measures known to limit its spread and virulence. Its progress on the continent may be judged of from the statement that at Hamburg, "between the 29th of August and the 6th of September, there were 239 cases, of which 136 proved fatal. We have not received later accounts of the exact number of cases and deaths, but we have been informed that the mortality has been very large. Dr. Webster, in his late Northern tour, followed in the track of the pestilence from Königsberg westward. He describes the severity of the epidemic as extreme. At Upsala the University had been closed, and many of the inhabitants had fled. The Board of Health, then, is certainly not premature in issuing a circular of precautionary advice to Local Boards of Health. Cleanliness, ventilation, pure water, are the great objects—the Public Health Act, the Nuisances Removal Act, and the Common Lodging-House Act, the means of effecting them. We trust that all will join cordially in assisting the Local Boards to exercise their powers to the fullest extent, in the hope of meeting the common danger; and, as an additional precautionary measure, we trust that the most stringent instructions will be given to our Custom-House authorities to prevent a direct importation of the disease. We are perfectly aware of all the arguments against quarantine and the contagiousness of cholera; but we still think that it would be a most culpable piece of neglect and infatuation to admit cholera patients arriving from Hamburg or elsewhere to unrestricted intercourse with the inhabitants of any of our ports.—*Times and Gazette*, Oct. 10, 1857.

SUBJECTS IN VIENNA.—During the last fortnight the medical professors and students at the General Hospital of Vienna have been in a state of excitement and irritation. The Archbishop of Vienna not long since gave orders that all persons who died in the various Hospitals, and in the Lying-in and Foundling establishments, should be buried without either *post-mortem* examination or dissection; and the consequence of the measure is that, during the last ten or fifteen days, there has only been one subject in the great dissecting halls of the General Hospital. Vienna was proud, and had good reason to be proud, of its Medical School, but the Concordat has given into the hands of the clergy the power to ruin its reputation. According to a decree of Joseph II., the body of every person who died in the public hospital was to be opened or dissected, as the case might be; but the imperial ordinance has, *de facto*, been abrogated by the Cardinal Archbishop of Vienna.—*Times and Gazette*, Nov. 14, 1857.

MEDICAL STUDENTS IN LONDON.—The number of students registered at the different medical schools in London this session is 1050. This is somewhat below the usual attendance, a fact which some of the English journals account for by reference to the increasing difficulties of procuring anatomical material.

SUIT FOR MALPRACTICE—CAUTION TO SURGEONS.—We do not know when we have had our professional indignation more thorougly aroused toward a so-called court of justice, and our sympathies more warmly enlisted in favor of the unfortunate brother who was the immediate sufferer, than in the perusal of a case that lately transpired in one of the interior towns of this State. It appears from the report published in the newspapers, the main points of which, we are told by a gentleman who was present at the trial, are substantially true, that a man, by an accident, unnecessary here to detail, suffered fracture of the thigh-bone. His family-physician was called in, who, not wishing to take the entire responsibility of the case, sent for another practitioner, Dr. W. McM., to see the case with him in consultation. The latter resided six miles from the patient, and partly on account of sickness in his own person, the *expectant* condition of his wife, and partly on account of the inconvenience of attending an important case so far away, refused to obey the summons. Upon the report of this to the injured man and his physician, they directed the messenger to return to Dr. McM. and say to him that he must come, if only for once. Such was the urgency of the appeal that Dr. McM. consented to go, but with the expressed intention of paying but a single visit. Arriving at the house he positively refused to take charge of the patient, but agreed to dress the limb, which having done with the assistance of the family-physician, he left the case in the hands of the latter. The splints were taken off on the tenth week, and it was proved that up to that time the treatment had been proper in every particular. However, deformity subsequently took place, and the family-physician having left the village, Dr. McM. was prosecuted by the patient, and mulcted in the sum of Five Hundred Dollars and costs. The point which the prosecuting party urged, and upon which the verdict was grounded, was that, a physician or surgeon having once visited a patient, could not discharge himself without the consent of the patient, no matter what the circumstances under which the visit was made, or what the physician's previous intentions or motives; and that, therefore, Dr. McM., through culpable neglect, was responsible for the deformity of the patient's limb.

PATHOLOGY VERSUS PHRENOLOGY.—Dr. Dimmick, of La Salle, Illinois, reports, in the December number of the *North-Western Medical and Surgical Journal*, a case in which there was a loss, by injury and subsequent sloughing, of a large part of the anterior lobes of both hemispheres of the brain, without any perceptible diminution, for the time being, of mental power or activity. The substance of the case is as follows:

A boy, two years and a half old, was kicked on the forehead by a colt; the frontal bone was fractured from one temporal fossa to the other, and the fragments of bone driven through the membranes into the substance of the brain. The first evening after the accident he was a little nauseated, but the three succeeding days he seemed as well as usual, and the family, not suspecting the extent of the injury, allowed him to play about the house, which he did with his accustomed liveliness. On the fourth day convulsions occurred, and Dr. Dimmick having been called, discovered the true state of the case, and proceeded to remove the depressed bone. This was accompanied with a free discharge of purulent matter and blood, and succeeded by paralysis of the right side. "For two or three days," to use the words of the reporter, "the suppuration and discharge of sloughed portions of the brain was profuse, accompanied at times by copious hemorrhage, so that by about the seventh or eighth day after the accident the anterior portion of the frontal lobes of both hemispheres, as far back, I judged, as the corpus callosum, was entirely gone. The orbital plates were laid bare. After washing out the cavity, the brain could be seen and felt, presenting an irregular surface or wall, nearly perpendicular to the base of the skull, and yet, to my surprise, he retained his mental faculties apparently unimpaired." He died two weeks subsequently, three weeks from the time of the injury, and "during the greater part of this time he was perfectly rational. In questioning him on points requiring the exercise of comparison, causalty, eventuality, numeration, form, color, etc., I asked him questions that I do not think could ever have occurred to him, and endeavored to confuse and puzzle him; but his apt replies and his judgment satisfied me that he was more precocious than most children of his age.

"The natural action of the bowels and bladder continued throughout the whole time."

REPORTS.—The present number of the Review contains the first of the series of Reports on Medicine, which, as stated in the last number, will hereafter constitute a separate department of the journal.

The Reports on Surgery, Practical Medicine, and Toxicology, are in course of preparation by Drs. E. HARTSHORNE, of Philadelphia, AUSTIN FLINT, sen., of Buffalo, and B. SILLIMAN, jun., of New Haven, respectively. The names of those engaged upon the remaining branches will be announced in due time.

PRIZE ESSAYS.—"At the meeting of the American Medical Association, held in Nashville, Tenn., in May last, the undersigned were appointed a committee to receive and examine such voluntary communications, on subjects connected with medical science, as individuals might see fit to make, and to award two prizes of one hundred dollars each to the authors of the two best essays. Notice is hereby given that all such communications must be sent, on or before the first day of April, 1858, to GRAFTON TYLER, M.D., Georgetown, D.C.

Each communication must be accompanied by a sealed packet containing the name of the author, which will not be opened unless the accompanying communication be deemed worthy of a prize. Unsuccessful papers will be returned on application to the Committee at any time after the first day of June, 1858; and the successful ones, it is understood, will be published in the *Transactions* of the Association.

GRAFTON TYLER, M.D.
J. C. HALL, M.D.
J. F. MAY, M.D.
THOMAS MILLER, M.D.
JOSHUA RILEY, M.D.
ALEX. J. SEMMES, M.D.
W. J. C. DUHAMEL, M.D.
Committee of Prize Essays.

WASHINGTON, D.C., Nov. 1857.

NOTICE.—The title page to the first volume of this journal, which was furnished in the November number, being deficient, and the publishers having determined to alter the style, the subscribers will find in the present number a new title page, which they are requested to substitute for the former.

The regular number of pages in each number of the Review, under its enlarged form, is One Hundred and Ninety-two, but, in consequence of a press of matter, sixteen pages extra have been added to the present number.

NECROLOGICAL NOTICES.

DR. ABRAHAM STOUT was born in Williams Township, Northampton County, Pennsylvania, on the 14th of February, 1793. His home was situated in a beautiful valley, among the Kittatinny Hills, which would have delighted the eye and taste of a Shenstone. He remained at home until he entered the drug-store of the late Dr. Fickardt, of Easton, from whence he went to Philadelphia, where he studied under Dorsey and Physick, whose friendship and confidence he retained as long as they lived. During that time he matriculated in the University of Pennsylvania, and after a careful attention to the studies prescribed, graduated in April, 1819. Two days after, he married Anna Maria, daughter of the late Asher Miner, Esq., of Doylestown, Pa.

He now settled at Springtown, a few miles from his native place; but after having been there a short time only, he was invited by the Moravian hierarchy to remove to Bethlehem, where he resided, with brief intermissions, until a very few months before his death, which took place on the 14th of March, 1857.

On the 5th of January, 1855, he lost his wife, a lady of unusual intelligence and excellence of character, whose biography, could it be written, would, perhaps, be as interesting as his own. This loss affected him deeply, and for a time seemed to disarm him for exertion.

Dr. Stout commenced the thirty-six years of his practice with indefatigable industry. Modest, persevering, and eminently industrious, his every energy was concentrated upon success in the profession he had chosen. His ambition was never of a monetary nature; indeed his attention was never thus engaged save when his desire to educate his children, or his profuse hospitality obliged him to attend to his fiscal affairs.

His success as a medical practitioner was great, and few country surgeons ever performed so many critical and trying operations with the same happy results. His manner to the sick was peculiarly kind and winning; his presence always gave pleasure to the patient, and by his cheering and encouraging words he often brought a cure which medicine alone might never have succeeded in affecting.

His specialties were the epidemic and endemic diseases of Northampton County, Asiatic Cholera, and the diseases of children. He prepared a valuable paper on these diseases, which, together with its geological charts and thermometrical tables, is deposited among the archives of the Northampton County Medical Society.

Surgery was his favorite branch. He was ambidexter, and in amputating a limb, or in operating for cataract, used his hands alternately without any difficulty.

He was a skillful lithotomist, as many can testify. Once he removed from the bladder of a female a calculus as large as an egg. From its apex protruded two-thirds of a darning-needle, the eye-end of which was so firmly imbedded in the specimen that it was found impossible to remove it without destroying the stone.

Hernia, in strangulated cases, presented no impediment to him; and he often subjected cancerous ulcers of the most virulent and painful character to the scalpel.

He was bold, thorough, and decided in performing operations, and, with but few exceptions, always met with remarkable success.

Dr. Stout was a handsome man, of fine physical development, and delicate features. He was extremely domestic, passing much of his leisure with his family. Very hospitable and liberal, he kept an open house, and had a hearty welcome for all; and, though but little of an epicure himself, his table was always well supplied with seasonable delicacies and viands of the choicest and most delicious flavor.

He cultivated the Catawba and Isabella grapes to a great extent, and in one year made twenty barrels of wine from them. This business is still continued at Bethlehem, and Reading, and also at Cincinnati. He also manufactured champagne wine extracted from the white currant, which in quality equalled the best approved foreign brands.

He was very fond of natural science, and in early life spent much of his time in collecting specimens in entomology, mineralogy, and botany.

The death of Dr. Stout caused profound grief in the social and professional circles of which he had so long been an ornament. His funeral obsequies were attended by a large number of mourning and sympathizing friends, who felt how difficult it would be to replace the loss they had sustained. Endowed with superior talents and a noble heart, his life was replete with laudable generous actions, which will ever live in the memories of those who knew him.

His remains were interred in the Moravian cemetery, in a spot which he had himself chosen for the home of his last dreamless sleep. M. R. S.

The late Dr. S. P. Hullihen, of Wheeling, Va.—If biography could do full justice to the life of Dr. Hullihen, a correct history of his professional career would be both instructive and interesting to his fellow-laborers in surgery, and especially grateful to his many friends; but this can scarcely be accomplished successfully within the limits prescribed by a medical journal.

Simon P. Hullihen was born in Point Township, Northumberland Co., Pennsylvania, on the 10th of December, 1810; his father was Thomas Hullihen, and his mother Rebecca Freeze, who went from New Jersey to Northumberland County when a child of seven years of age. The grandfather of Thomas Hullihen came from Ireland, and his family from that period continued to be industrious Pennsylvania farmers. Mrs. Rebecca Hullihen, the doctor's mother, retained, until a very advanced age to which she lived, a strong predilection for simple country life and habits. Dr. Hullihen was a mere child when his father died.

The early education of Dr. Hullihen was such as the best school in his mother's neighborhood afforded—the township district school; and although it did not embrace a very extended course of study, yet such as was taught there he eagerly and diligently pursued, and in every instance successfully mastered. His academical training terminated when he was under seventeen years of age, and from that period, except medically, he was a self-educated and self-made man.

During his boyhood, when only eight or nine years old, a serious and most painful accident befell him, which no doubt exercised an important influence both upon his mind and bodily health for the remainder of his life; and though he himself has sometimes told the story with a peculiar quaintness not to be forgotten by those who listened to him, he was never sufficiently explicit to permit the occurrence to be given in all its details of interest to the reader. While playing with other boys in the vicinity of a limekiln in which the fire had recently subsided, young Hullihen was pushed or fell through the opening at the top in among the unextinguished embers or heated stones at the bottom; before assistance could be obtained to draw him from his perilous situation, his feet were both terribly burned—so severely indeed, that he was confined to his bed for nearly two years, and in spite of his mother's constant and devoted care he was in danger of being permanently a cripple. When after long sufferings and severe trials of patience he was able to stand, the principal injuries being about the heels, he at first walked entirely upon his toes, a necessity which grew into habit, his feet remaining sadly deformed; but in time, and by the aid of contrivances, he was enabled to wear boots and to walk without the use of a cane. At an early period after his recovery from this suffering he made accurate plaster Paris casts of his own feet, and by sending them to the last-maker obtained his first comfortable boots as the reward of this natural genius for mechanics.

During the protracted illness of her son Mrs. Hullihen indulged the consoling thought that he would be able to acquire such impressions as would give him a religious turn of mind, and that she might see him a clergyman. With this idea the pious good mother taught her boy to read and study the Scriptures with persevering attention during the whole period of his confinement; and although her fond expectation as to his future profession was not realized, the Bible teachings then imparted were never forgotten by him.

Scarcely had Hullihen approached the age of manhood ere he evinced decided inclinations for medical pursuits—principally those belonging to practical surgery: he always had a desire to witness operations and see wounds dressed; and even at this time he purchased some dental instruments, and would benevolently extract teeth for suffering neighbors or acquaintances. His skill and kindness in this way soon became so well known that he relieved the country doctors from that troublesome and unprofitable practice for which the better class have neither much taste, time, or ability. He was ever ambitiously reading the best medical and surgical works he could get hold of, and at the period of his eventual success and widely extended fame as an operator his medical library consisted of the most reliable writers, and the volumes themselves bore evident marks of long and frequent use by their owner.

Dr. Hullihen commenced practice as a surgeon and dentist at Canton, Stark County, Ohio, in the year 1832, but there are no means of ascertaining with what amount of good or ill fortune, unless by inference from the fact that when he married Miss E. Fundenburg, at Pittsburg, in April, 1835, he immediately transferred his residence to Wheeling, Va. Here he continued until his death, in March, 1857. The settlement of a young surgeon in a western town twenty-two years ago, and one especially who dared to announce himself as intending to practice dentistry as a branch of his profession, was not likely to meet with sympathy or cordiality from the medical practitioners already established there; but, on the contrary, the petty jealousies that proverbially belong to doctors were, in this instance, more than ordinarily bitter. Yet it may justly be a matter of astonishment and disgust that these bad feelings should be fostered in the breast of even a single man, to the degree that would induce the circulation of gross and malignant slanders, with the design and hope of preventing success in a fellow practitioner. It was perhaps this element of early and undeserved persecution that greatly contributed to excite all the ambition of a noble character, and caused good to come out of evil, as witnessed by his ultimate prosperity and usefulness. It would be out of place to introduce here, however creditable as well as characteristic of Hullihen, a detailed history of the unworthy opposition he encountered and triumphed over at the onset of his professional career in Wheeling; the public records there have, years ago, placed that matter among the evidences that "truth is mighty and will prevail," and that the humble virtuous man may obtain full justice if he has the courage perseveringly to demand it. While suffering under the unkind and unjustifiable efforts to misrepresent his character and drive him from Wheeling, an incident occurred which aptly illustrates the parties to that opposition. As young Dr. Hullihen sat at his window opening on the street, waiting with small hope, no doubt, for the professional calls that came not, he observed two of the young dandies of the town, one of them a medical student in the office of an established practitioner, coming toward his house; the student carried a chicken cock under his arm, and the manners of both the young men indicated mischief on foot. When they reached his window, they accosted Dr. Hullihen cavalierly with—"Dr. we have brought you a patient this morning, wanting your surgical skill," and the chicken cock with a broken leg was at once exhibited. Hullihen was prompt in seeing the intention to mortify his professional pride, but as promptly and quietly resolved upon the right mode of punishing the offenders. He examined the fracture carefully, and then told the young idlers it was readily within the means of cure; he forthwith set about the operation; splints were very nicely prepared and adapted, the young men acting as assistants. "And now," said the surgeon, "you must leave this patient with me for about ten days, during which time he shall be kept quiet under a barrel in my cellar, and provided with the proper diet; at the end of that time you will please call for him." This was a very unexpected turn of the case to the youug dandies, and they left the office of Dr. Hullihen with no intention of ever returning for the poor cock whose leg they had purposely and wickedly broken merely to play a trick upon the doctor. Finding they did not come back in a fortnight, Dr. Hullihen politely notified them of the patient's entire cure and readiness to return home. No attention being paid to this message, he sent back the chicken with a bill of twenty dollars for professional services. The charge was ridiculed, as he expected, and payment refused; but the doctor notified them that he would bring suit, and the matter was accordingly brought before a magistrate. Hullihen made his own simple statement of the facts, and *judgment was given in his favor for the full amount of the bill:* this sum the doctor requested should be given to a charitable institution. By this result of a practical joke, the jokers became the laughing-stock of the whole town, while the man they intended to mortify was advanced in popularity and public estimation.

The general state of dental surgery at the southwest, and indeed anywhere, twenty or twenty-five years ago, leaves one greatly in the dark as to whence Dr. Hullihen could have derived his high standard of practice in that department of surgery. He had read and digested the English works and a few translations from the French then existing, but these afforded very slender capital in the way of example or guidance to a man beginning his professional career in a small Western town. His reliance then, we may safely conclude, was in his own natural abilities, backed by an honest and persevering ambition.

In truth, Hullihen was a man of true genius, and especially gifted in reference to original conceptions whereby to overcome difficulties; he possessed the discriminating mind, the rapid eye, and the cunning hand that act in harmony and combine to produce spontaneous and correct decisions. These qualities, so peculiarly marking the great and successful surgeon, became at once apparent to the sufferer for whose relief Dr. Hullihen was called in; it was not merely when he assumed the task of a bold and difficult operation, but when his earnest, clear and methodical mind applied itself to the examination of a case, there was a faith-inspiring confidence in his own heart permitting no doubt that the very best interests of the patient, and nothing else, would govern the surgeon's rule of action.

Hullihen had a warm and most generous heart—one so full of the best impulses toward his fellow-men that he never found room there for himself, or time to consider his own interests; and yet such was the untiring industry of his active professional life, and the many strong personal attachments he inspired, that grateful and unexpected compensations continually came to his ungrasping hand, to be again scattered by an unselfish liberality.

Dr. Hullihen received the degree of Doctor of Medicine from the Medical Department of Washington College, Baltimore, Maryland; but he had no wish to, and never did practice general medicine. His great success and usefulness appeared in surgical operations, and these were not confined to the town of Wheeling: patients of all classes, confiding in his skill and frank character, came in great numbers from the surrounding country, and it is no exaggeration to state that the value of his services as well as the influence of his reputation eventually came to be considered precious as the common property of Wheeling. Hence, whenever any worthy scheme, whether charitable or political, was to be successfully carrried through, it seemed a necessary preliminary to obtain for it the interest, approbation, and co-operation of Dr. Hullihen. On such occasions—and they were numerous beyond credibility—the object, whatever it might be, was sure to receive the most active indefatigable efforts of which he was capable, and others were soon brought over to it by his generous example no less than by his sound, sensible arguments. Prominent among the good projects of Dr. Hullihen was his great desire to establish a public hospital at Wheeling, where the sick and disabled of every class might find proper attendance while under medical treatment or surgical operations. He well knew that much suffering might be spared by judicious attentions, and that, in many instances, lingering maladies, and even the loss of life itself, was the sad result of bad nursing. To found such a hospital he exerted himself in every direction that seemed practicable: as a member of the city council and otherwise, he endeavored to enlist the city itself in the humane enterprise, but without success. Nor was he able, during several years of effort, to secure any material aid from any quarter. In the mean time his own growing reputation as a surgeon, occulist, and dentist was, as I have said, attracting patients from a distance, and somewhat to meet the exigencies of his private practice, he established an infirmary of his own. The prosperity and increasing importance of this unpretending charity became the cherished object of his daily and devoted attention, and at length he concerted measures with

Bishop Whelan, a gentleman of great energy and practical benevolence, to establish a hospital under the charge of one of the religious orders of the Catholic church. Having secured the aid of the "sisters," with the co-operation of the bishop, he entered upon the work of building up his favorite institution with all the earnestness and devoted zeal which marked his character. A house was purchased by the bishop for the residence of the "sisters," and Dr. Hullihen supplied it with patients at once to the extent of its capacity. This beginning must have been made about seven years ago, and not long afterward (March 12, 1850) a charter was obtained, for a corporation under the name of "The Wheeling Hospital." This corporation is now the owner of a large and commodious building at the north end of the city, a property purchased two years since, and the building has been subsequently much enlarged. At the time of Dr. Hullihen's death it had become the resort of patients from all parts of the country, brought there chiefly by his high reputation and remarkable success. He had not only contributed largely to the prosperity of the institution by his strictly professional exertions, but he was assiduous in his care for its good management in every department. Although assisted by the contributions of some benevolent persons, and by the active exertions and liberal expenditures of the bishop, as well as the gentle charity of the good "sisters," and although sustained by the professional skill of doctor M. H. Houston, the eminent physician of the hospital, Dr. Hullihen was the founder—the life and soul of the enterprise. Its success was assured by the co-operation of others, but it would have been impossible without him. He left it in a flourishing condition, and it is probable that his efforts in connection with it and in his general practice overtasked his physical powers and contributed to bring on his untimely death.

Without pretending to offer full statistics of the operations performed by Dr. Hullihen, it may convey a correct idea both of the range and the extent of his surgery to state that, during the last ten or twelve years of his life, the professional memorandums on his books show that he operated—

For Cataract,	about	200	times.
" Hare-lip,	"	100	"
" Cleft palate,	"	50	"
" Cancers,	"	150	"
" Antrum cases	"	200	"
" Strabismus,	"	100	"
Making new noses,	"	25	"
" new lips,	"	50	"
" under-jaws,	"	10	"
General surgery,	"	200	"

Add to these the busy practice of a successful dentist in all the branches of his profession, and we exhibit an extraordinary amount of labor, of energy and usefulness, such as few men have lived to accomplish even in a much greater number of years. But, however great the industry needed to meet the demands upon his skill, and the wear upon his frame, when the truth is known, that nearly one-third of all this labor was the work of charity, we form a just estimate of the tax upon a noble heart and a self-sacrificing nature. It was a rule of his professional life to make no charge whatever for services rendered to clergymen, no matter where resident or of what persuasion: thus, in the department of artificial teeth, Dr. Hullihen supplied in a single year charity-work amounting to about two thousand dollars, at the ordinary rate of charges to others. There is no need of comment upon the liberality displayed on the one side and abuse of it on the other.* An anecdote in this connection seems apropos.

Hullihen had encountered some ungrateful cases that were not a little trying to his patience, when he was applied to by a country gentleman of the pulpit, with very miserable teeth,—one indeed who had only a sad array of decayed fangs. This patient expressed great wonder as to the cause of diseased teeth and their loss when life was scarce half over;—"it was unnatural: it could never have been the design of Providence!" and he wished the doctor would explain the mystery. The general causes that lead to decay and loss of teeth were very carefully gone over by the doctor, and the visitor, with a mind apparently enlightened and satisfied, left the office; but in a day or so the same gentleman returned, and again he wanted the doctor to tell him *why* it was that teeth decayed; why *he* should be thus sorely afflicted so early in life. A little impatient at the evident inattention to his previous explanations, the doctor now said:—"Well, sir, I very recently gave you a *professional* view of the causes of decay in teeth, which you seem not to have understood, so I will now give you a *scriptural* explanation of that misfortune, which you will understand. You are, of course, conversant with the scriptural history of the forbidden-fruit, and the sin of our first parents; you must perceive that when Adam and Eve ate the apple they bit it with their teeth; of course, then, the teeth being the immediate instruments of sinful disobedience, it was right that they should be the greatest sufferers for the offence. Therefore, we may conclude, that whenever a man has very bad teeth early in life, there is an unusual amount of old Adam in his nature!" This original opinion of the cause of decayed teeth was probably better remembered by the patient than the previous scientific one.

Dr. Hullihen published many valuable papers on medical subjects, but they have not been preserved or collected in such a form as to permit a correct reference to their extent. Those that have come to my knowledge are as follows:—

1839—*An Essay on Odontalgia.*

1844—*A Treatise on Hare-Lip and its Treatment.*

1845—*An Essay on Cleft-Palate and its Treatment.*

1846—*An Essay on Abscess of the Jaws and Treatment.*

1849—*Report of a Case of Elongation of the Under-Jaw, with Distortion of the Face and Neck, caused by a Burn, Successfully Treated.*

Dr. Hullihen's correspondence was very extensive, and from his letters, as well as publications, his style may be regarded as clear and energetic, with an earnest warmth, a direct truthfulness, and originality that strongly partook of his character.

He was the inventor of many new forms of instruments of great value to the dentist and the surgeon, but he never took credit to himself for these improvements, allowing the cutlers the free use of what he originated. As a dentist, Dr. Hullihen was eminently judicious and skillful. His elevated views of practice have been embodied in his own language, when he said:—"*The dentist must carry upward the standard of his profession and plant it upon the broad platform of medical science; he must claim for himself and his profession the same respect and importance awarded to other branches of the healing art, and that, too, upon the same ground,—the ground of a thorough scientific education.*" It is not practicable here to give a history of the various improvements and discoveries contributed to dental surgery by Dr. Hullihen, but I desire, at least, to name, with special interest, his very valuable improvement in the operation of filling teeth when the decay has reached the nerve-cavity. This original device consists in perforating the fang through the gum and alveolar process into the nerve, before packing the metal, and has been particularly described to the profession in the pages of the *Philadelphia Medical Examiner* for Oct. 1852. This successful mode of filling teeth when the nerves are exposed, has justly been termed the *Hullihen Operation*, and has been approvingly and gratefully adopted by the best dentists of our country.

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* It is sad to say, those who most deserve such exemption, and for whom it is a pleasure to exercise professional skill, are the very men who are least inclined to accept such favors.

Those who were best acquainted with Dr. Hullihen, and able to appreciate his value, in the profession as well as out of it, will not be satisfied with any other title for him than that of *a great man*. Hence the monument being erected to his memory by the city of Wheeling was justly due to his character and services; it was the natural act of a sorrow-stricken community, and is the more honorable as the spontaneous movement of a grateful people in whose midst the best years of his life had been spent, and is a true expression of the well-earned love and gratitude existing toward him, and realized at the period of his untimely death.

In this brief sketch I am conscious of having done but imperfect justice to the life of a very distinguished man, with whose warm friendship I was honored; but my consolation is, that it has at least been a work of love, the only duty and privilege I could claim after watching by his bedside the last three days of his existence.

Dr. Hullihen's death was indirectly caused, as before intimated, by his great devotion to the duties of the Wheeling hospital: he took a severe cold from sudden exposure after being heated in the operating theatre, bringing on pneumonia and fever that became unmanageable, even by the best medical skill and attention. E. B. G.

DR. WILLIAM H. DEADRICK.—We are called to record the death of Dr. William H. Deadrick, of Athens, Tennessee. He died on the 30th inst., at the advanced age of seventy-five years.

For half a century, Dr. Deadrick was engaged in the practice of medicine, having graduated at an early age, and entered upon the profession at Rogersville, Tennessee.

The character of his practice may be inferred from his having undertaken the novel operation, in 1810, of removing a portion of the submaxillary bone for exostosis. The boldness of this operation, as well as its success, gave Dr. Deadrick a name and a reputation as a surgeon of no mean degree, and which he had only to follow up to have placed himself at the head of the profession. But his naturally retiring disposition induced him to remain quietly in the enjoyment of his then *backwoods* practice, and to be content with the confidence of his own circle of friends and relations.

But this one operation has imprinted his name upon the records of American Surgery—especially since, with him, it was no hap-hazard case—but one directed by reason and judgment. For many years Dr. Deadrick resided at Athens, Tenn., the latter part of his life in partial blindness. He died, as he had lived, a devout Christian.—*Southern Journal of the Med. and Phys. Sciences*, Oct. 1857.

SAMUEL METCALFE, M.D.—In a late number of this journal we published a brief notice of the death of Dr. Samuel Metcalfe. We find the following sketch of this gifted but unfortunate man in the *Times and Gazette* of September 5th.

"The *North American Medico-Chirurgical Review* for May, 1857, contains the account of the last days and death of a remarkable but little recognized man in the world of medicine—Dr. Samuel Metcalfe. The name will be well nigh forgotten in the London sphere, except by one or two who knew the man as a friend, and loved him as a devotee to science. Yet, fifteen years ago, this said man was busied writing the last lines of a great work, which to his hoping mind was to carry scientific men away in a whirlwind, was to revolutionize thought, was to effect reforms in more things than physic, was to uplift the veil of ignorance, behind which simple facts stand as unmeaning mysteries, and was to afford a key to the phenomena of life.

"There was something savoring of romance in the aspirations of this medical philosopher; there was more of the practical romance in the mode by which he carried out his purposes. Early in life his mind caught fire on the subject of Caloric, and for many years he worked away in Mississippi at his favorite theme, succeeding at the same time in his duties as a practitioner. Next he was elected Professor of Chemistry in the University of Transylvania. But here, as his argument grew more powerful, he felt the basis of his research limited: he could not breathe in the confined book air; he must go to London, or his mission would fail.

"He reached London in 1836, and commenced his work. His means were limited, and his health feeble, yet he struggled on in a labor that was immense. As the time fled the resources fled also, and the man came down to positive penury. A friend whom we know, and who knew Metcalfe, was accustomed to call on him, and was allowed the entrée into his one miserable room. The room was empty of all that might be thought necessaries, but the man, caring nothing for externals, worked away. At last the bodily bankruptcy proclaimed itself, since even a philosopher cannot work without brains, and brains cannot work without fuel; and the poor author was so far beaten by poverty, that but the fact that Dr. Willis, of Dover Street, now of Barnes, himself then none of the richest, came to the aid of his neighbor, and divided with him his own lot, we might now have been writing even a more painful history.

"Meantime, in the midst of this distress, (thanks to the liberality of Mr. Pickering, the publisher,) the great work appeared, in two volumes. It came forth to fall still-born from the press. The *Medical Gazette* of that day spoke of it in a full strain of praise, and other reviewers thought it remarkable, while all acknowledged that it was learned to a fault. The commendation was in whisper, and the book was a failure. After seeing his hopes lost, Metcalfe, assisted, we believe, by the Literary Fund, retraced his steps to America in 1845. His English friends thought him lost or long dead, but it seems that, absorbed in his favorite pursuit, he studied on at a second edition of his work until the 17th of July, 1856, when he died completely exhausted, his labor still unfinished on his hands.

"In all literary and scientific undertakings the success of the work depends not so much on the worth of the work, as on its accordance with the temper of the time. Metcalfe's book failed because it was out of the general harmony. Hippocrates, Harvey, Newton, would have equally failed on similar grounds at that time. The book itself was a grand scientific poem chanted in prose. It developed a unit in creation, and made out of this unit a prime mover and agency for all natural phenomena. The conception was magnificent, and there were sentences of deep thought in these volumes, which will some day be considered as well nigh prophetic. The science of the time in which the work appeared, on the other hand, was entirely opposed to thoughts, and was bound down to the bare reception of details. The details might be true or false, no matter: it was in character with the time to have them; details were in demand in the science market, and Metcalfe, who was a bad speculator and an honest trader, lost his honors because he could not barter according to the popular will.

"Metcalfe failed personally also in his relations with the world. He was not what is vulgarly called 'thin skinned,' but he was unusually sensitive in argument. He would yield a triumph to a mere blatant, rather than come into collision or actual fight. Hence men of meaner cast outstripped him in the race. The history of his career is at once as instructive as it is painful. We have said that at the time of his death the second edition of his great work was not yet complete; but we hope that what he had already done will not be buried with the man. When this iron scientific age, unrelieved, dark and barren, has passed away, Metcalfe's book will perchance stand out as one of the few volumes of the present day in which genius is enshrined."

Bi-Monthly Bibliographical Record.

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Manual of the Botany of the Northern United States. Revised edition; including Virginia, Kentucky, and all east of the Mississippi; arranged according to the Natural System. By Asa Gray, Fisher Professor of Natural History in Harvard University. 12mo, pp. 630. Ivison & Phinney: New York, 1857. (Received from the publishers.)

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The Use of the Microscope in Clinical Medicine. Illustrated. By L. S. Beale, M.B., &c. &c. No. 1. Urinary Deposits. With 14 plates, containing upwards of 60 figures. 8vo, pp. 32. Churchill London, 1857.

THE

NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

MARCH, 1858.

Analytical and Critical Reviews.

ART. I.—*A Practical Treatise on the Diseases of Children.* By J. FORSYTH MEIGS, M.D., Fellow of the College of Physicians; Member of the American Philosophical Society, and of the Academy of Natural Sciences of Philadelphia. Third edition, carefully revised. Philadelphia: Lindsay & Blakiston, 1858.

NINE months before the issue of the volume above named, the second edition was exhausted, and we have now before us a third edition, greatly improved. Dr. Meigs's work requires, therefore, no further introduction at our hands; and will be welcome, in its amended form, to those whose appreciation of its value is shown in the ready sale of the preceding editions.

Amid the subdivision of medical labor—which is a growing indication of our progress—it is easy to see why the diseases of children have come to be regarded as worthy of special study, and of separate record. From the epoch of puberty, and the close of childhood, up to old age and death, the adult man, though he may change as to constitution, strength, and endurance of certain remedies, does not undergo those revolutionary alterations which belong to the whole fertile life of the woman, and, in other forms, to that of the child also. The utmost we can say of the adult male is that he is more subject to certain diseases at one age than he is at another. Thus, between fifteen and twenty-five, he is most liable to typhoid fever. Typhus finds him a readier prey after the age of twenty-five. He has also his era of maximum liability to variola, etc. While, however, this is the case, no coincident physiological phenomena mark out these periods in the healthy man; and if such changes do occur, we have no normal notice of their being, and can only infer from our tables of mortality that at such and such a time some change in his economy has made him a readier victim to this or that disease. How different the case in woman is well enough known. After the establishment of puberty she has, besides her menstrual flow, the chances of pregnancy and the final loss of the reproductive capacity to look forward to as, at least in many cases, the causes or occasions of disease. In revolutions of the physiological as of the social state, whatever there is of ill in our corporal community of organs is very apt to find in these eras of change the occasion for development of mischief which unhappily too often survives the period which allowed its birth. Still more remarkable are these times of danger and of change in the growing child. Not only has it constantly to provide for the losses of tissue which result from functional activity, but it is also called upon for the added supplies which are essential to its development toward maturity. Here are nutritive wants, varied in kind, and quite peculiar to the child.

The revolutionary eras of the period of growth are well marked, and offer many diagnostic indications, and many chances for disease which are no longer present in the completed adult. We have thus in the infant a period immediately following birth, when, for a week or ten days, the child either does not gain in weight or actually loses weight. During this time, the secretory organs are active, the accumulated fœces escape, and the child has peculiar liabilities to disease, which have been studied as the diseases of the newly born, and of which we find our author speaking in the proper place. We have next an era of rapid growth, and then the months of teething. This formation of teeth seems to be an indication for their use—in other words, for a change of food. Usually, with us, the time of lactation is a year, and often before the end of it the child is fitted by nature for other and more varied food. Among the lower classes especially, the child is kept at the breast for a much longer time. This is due, as is well known, to an apprehension by the maternal community of the convenient fact of the frequent insusceptibility to reproduction thus obtained. So far as we have seen, it is less hurtful to the child than to the mother, because the child is usually supplied with other and additional food. The second summer is, in this country, another period of danger to the child. Finally, we have the era of second dentition, less fertile of danger, it is true, but still to be remembered; and, lastly, we come to puberty—the boundary between childhood and adult life.

During all these periods of existence, it is curious to note how little the two sexes differ; and to see how, as they draw near to the time of sexual perfection, their lines of life diverge, and the child, which is either male or female, becomes girl or boy, and glides from an almost unsexual neutrality into virile or feminine completeness. In glancing through the preliminary chapter of our author's work, which is devoted to the diagnosis of the diseases of children, we have found a great deal which must interest all physicians; but we were a little disappointed at not finding some more extensive essay in the direction we have just pointed out. A sketch of the physiological life of the child would not have been any more out of place than details as to its respiration and pulse. We may add, that some such special remarks upon the dangerous periods of childhood would be of great use to the student and younger physician, who is more prone to overlook the consideration of these eras than to neglect any other of the diagnostic or therapeutical indications. We hope to see, in a future edition, this physiological sketch of the period of growth. The materials for it are abundant, and, although scattered, would well repay collection, and would fitly preface so good a book as the one we are about to consider.

With the slight exception above stated, we can commend the opening chapter as one of great use and value. For the young medical man, its hopeful tone is also an encouraging reception at the commencement of a volume on a subject which he finds every day of the utmost difficulty. He will here find, well detailed, each point of clinical value in connection with every portion of the body which has the power to aid, by its diseased expressions, in giving certainty to diagnosis. At first sight, what more hopeless cases can be offered to a young doctor than the nursery orchestra of sick and crying children, who disappear under bed and table as the young cutter of gums and tyrant of doses enters the room? As Dr. Meigs assures us, however, these little animals, so dumb as to all power of intelligible lingual expression, are forced to confess their ailments in many ways by disease itself. Unlike the adult, the young child restrains no feeling—has no hysteria, thank heaven, and is honest in disease. Moreover, the babe at the breast has a fixed diet, easily examined—no small advantage in some cases. Lastly, the bawling little patient is open to many ways of questioning. Its heart talks to you in its own fashion. Its breathing speaks, and often plainly enough. Its chest responds to the queries of percussion. Its very cries have meaning, when once is learned this Sanscrit tongue of the nursery; and, finally, the face of childhood is the very play-ground of expression. To all of this Dr. Meigs calls attention, and it is, after all, this kind of knowledge which makes up the most of what is termed experience.

The book under review divides the maladies of childhood into six classes :—1st. Diseases of Respiration. 2d. Diseases of the Digestive Organs. 3d. Diseases of the Nervous System. 4th. Eruptive Fevers. 5th. Diseases of the Skin. 6th. Worms in the Alimentary Canal. Here is no word about the kidney, or the genito-urinary apparatus. It may indeed be said that, for reasons too plain for relation, the procreative organs of the child are but little subject to disease, or only liable, at most, to maladies which claim the surgeon's care. On these accounts we are not often called upon to treat in children diseases of these parts, and we have, therefore, but little mention of them in the work of our author, and of others. While admitting such excuses, we cannot but think that incontinence of urine is a subject for discussion in a work on the diseases of the young. Certainly there is no one of the non-fatal maladies of youth which, in some cases, is more baffling than this, and we believe that the experience of those who have the medical charge of children's homes, houses of refuge, etc., will bear us out in this statement. The mention of it also reminds us that, except in cases of albuminuria after scarlatina, Dr. Meigs does not speak at all of the occasional necessity of examining the urine of the child. In some instances of incontinence of urine such an investigation is essential to a full diagnostic view of the problem before us. In older children the secretion is of course collected as in grown persons. In the infant we have been obliged, where this examination was needed, to direct the nurse to bind a soft caoutchouc bottle, with a large orifice, over the genital organs, by which means, with a little care, enough of urine may be readily collected for purposes of testing and inspection. Another class of cases very frequently demands an examination of the renal excrements. We allude to the dyspepsia of an acid character with which children at the breast are sometimes affected, and which, in them and in those of an older growth, not unfrequently produces uric acid gravel, and, more rarely, permanent calculous affections. The appearance of these deposits in the urine of children we have found to be far more common than is usually supposed to be the case. In this view we are supported by the statements of Dr. Prout, who tells us that of twelve hundred and fifty-six patients received into the Bristol, Leeds, and Norwich hospitals, for the purpose of being operated on for stone, five hundred, or nearly forty per cent., were under ten years of age. If we bear in mind, adds Dr. West, the intimate connection that subsists between the assimilative and the excretory functions, it will not surprise us that in early life, when the former, though so active, are so readily disturbed, the latter should be often thrown into disorder.

As we have stated above, Dr. Meigs begins his list of diseases with those of the respiratory organs. His first chapter treats of coryza, and is a fair and well-written essay upon a malady which, although usually of but little moment, is sometimes of tedious duration. He dwells particularly upon the physiological difficulty which the young child experiences in breathing through the mouth when the nostrils are completely clogged with pus or mucous crusts. In such cases death may result from asphyxia, as in the instance described as an illustration of the severer forms of this disease. On one occasion, several years ago, we encountered a similar case, which resisted all the usual means, such as blowing into the nostrils, caustic applications, etc. The difficulty of breathing through the mouth for any length of time seemed insurmountable. When, at last, satisfied as to the probable result if no further aid were given, we introduced a piece of gum catheter into one nostril, and, after some effort, carried it back into the fauces. Through this the nurse blew occasionally, so as to free the inner end from mucus, and through it the child breathed with evident relief until the other nostril was restored to a healthy state by superficial scarifications and the use of caustics. The means we have mentioned certainly seemed to us to have been effective in aiding, and, perhaps, in saving the little patient.

Our author next treats of the various forms of laryngitis, rightly separating spasmodic croup from pseudo-membranous laryngitis.

The latter, true croup, claims a large share of attention. After insisting upon the absolute necessity of early and vigorous treatment, Dr. Meigs proceeds to discuss the various means to be employed for this purpose. In one hundred and nine cases of spasmodic croup he saw no death, while of twenty-two cases of true croup but ten proved fatal,—an extremely good result, and contrasting very well with the statement of M. Guersent, who cites the mortality of his own cases as eight in ten. Probably he had to deal with hospital cases only, while our author's more agreeable experience is confined to private practice.

Dr. Meigs seems indisposed to bleed, as a general practice, in cases of croup. As he states, (p. 97,) emetics undoubtedly give more relief at the time, and bleeding is to be used, as in other cases, only where the constitution is vigorous and the fever high. Indeed, emetics are regarded by Dr. Meigs as the most efficient remedies in croup. He prefers, on the whole, an emetic proposed by Professor Meigs. It is powdered alum, diffused in molasses, and given in teaspoonful doses. We also have used this article, and can speak confidently as to its great efficiency and certainty. A single dose almost immediately vomits the child, and is never so prostrating as the favorite antimonial preparations. Mercury holds its usual place in our author's catalogue of the means of cure. The use of nitrate of silver, as an application to the pharynx, is also discussed; but our author adds no new facts in regard to its application to the interior of the larynx, although he agrees with Drs. Green and West, in believing such applications possible. The question in regard to tracheotomy in croup receives a full, and we think a satisfactory answer from our author. Dr. Meigs's personal experience in the results of the operation has not been large, but he has collected a mass of information which makes it very clear to us, that not only is the operation justified in many cases, but that where the usual remedies have failed and death seems highly probable, it is a means which should be resorted to without hesitation. It is also very clearly shown that since the introduction of M. Trousseau's improvements, the mortality after the operation has considerably diminished. We regret that we are unable to follow more closely our author's reasonings, and the facts upon which he rests his conclusions in favor of the operation, in cases where calomel, emetics, bleeding, and counter-irritation have failed to bring about a cure.

Congenital and post-natal atelectasis pulmonum are next discussed, and we are offered a very good summary of the present state of knowledge upon this comparatively novel subject. But as it is plainly impossible here to analyze, or review fully the many chapters of Dr. Meigs's work, we prefer, on the whole, to glance at one or two, and then to devote a larger space to the consideration of his views upon scarlet fever and its sequelæ.

As regards hooping-cough, we observe that Dr. Meigs thinks alum, carbonate of potassa, and belladona, the best remedial means. He does not allude to the use of coffee, or to the application of caustics to the pharynx and larynx, as advised by Dr. Brown-Séquard, and ably defended by him upon the ground of the success which he claims to have met with by its use, and also for physiological reasons, which certainly appear to give a color of rationality to its employment.

Under the heading of Diseases of the Digestive Organs, Dr. Meigs occupies one hundred and forty-five pages with the consideration of these maladies. The articles upon diarrhœa, dysentery, and cholera infantum, are perhaps overloaded with numerous opinions of writers upon the value of the remedial means in use, and the summary and criticism of the author upon their views is by no means so good as the corresponding portions of other chapters in the preceding portion of the volume. We find, however, especially in the article on cholera infantum, an attention to the peculiarities of the disease in this country, which is every way commendable, and we cannot but thank Dr. Meigs for his severe strictures upon the criminal carelessness, and even folly, of the parents of American children. We admit, most freely, that climate and other unknown agencies have gone far to modify the constitutions of the human family on this side of the ocean. The feet and hands have become smaller; the voice has a higher note; the face has grown more sallow; the teeth defective, and the features sharper; so that, beyond a doubt, the race is by degrees becoming altered and acclimated. Yet, while nature is doing something to disturb, the loose and wayward habits of our people are also operative, and the whole blame of the frequent ill-health of children, particularly among the better classes, must by no means rest alone upon natural causes. Among the dwellers in towns, the physical education of the young, especially of girls, is utterly neglected. Their dress, also, is often absurd; their diet ridiculously luxurious; and after all this, when the heat of summer or the cold of winter affects them, the blame is laid upon our unlucky climate.

In turning from the class of maladies just alluded to, we meet with some general remarks, which precede the consideration of the diseases of the nervous system. Here Dr. Meigs takes occasion to comment upon the prevailing belief that these disorders occasion a larger number of deaths in childhood than do any others. He believes this opinion to be ill-founded. In this city, between the years 1844 and 1848 inclusive, the number of deaths from diseases of the nervons system was less than from those of the digestive system, and not much greater than from those of the respiratory organs. Practically, however, as M. Barrier hints, the popular view is not so far wrong as would at first appear; we mean to say that it points practically to the fact that the brain of the young is more susceptible of diseased impression than that of the adult,—a point upon which the death statistics cannot tell the whole truth. Thus, every one knows how many children who die from scarlet fever die through the brain, if we may be allowed so to state it. Even in intestinal diseases this is frequently the case; and yet, as a matter of course, none of these are set down as nervous diseases. The physician properly goes beyond the final cause, and past the organ through whose lesion the death occurs, to state in his certificate the name of the disease or the remotely active cause of death.

Passing by the subject of nervous disorders, which are very well treated, and illustrated with some curious and interesting cases, we next encounter Class IV.—*Eruptive Fevers*. We shall here take occasion to dwell upon the scourge of childhood—scarlatina. In regard to the name of this dreaded malady, a popular idea exists that the term scarlatina means a disease of a lighter character than scarlet fever. This is due to the fact that we have no distinctive popular names for the milder forms, and that physicians are sometimes willing to calm the fears of the mother by using the Latin synonym in place of the more familiar English designation. This fearful malady seems to have been quite unknown to the ancients. Some traces of it are to be found in the medical writings of the 16th century, (Ingrassias, 1500,) and it is said to have been imported into Spain from Africa, about 1610. It was described, in 1650, by Martianus, and in 1689 it was seen in London, and delineated by Morton and Sydenham. At and after this time it was more or less confounded with measles, and received a variety of names, which added further to the difficulty of its discrimination. For Sydenham, it was scarlatina; for Morton, morbilli confluentes; for Hoffman, rubeola rosalia; it was the malignant sore throat of Huxham, the febris rubra of Hiberden, and the purpura of Schultz and Jencke. About 1778, Withering finally separated it from measles, and the two are now no longer confounded. Dr. Meigs seems to have had some trouble in his divisions of scarlatina. In this edition he finally rejects them all, and treats of it as one fever, discriminating only as to mild and grave cases. We are not disposed to quarrel with his divisions. They are, after all, equivalent to those of all authors who reject the simple variety without sore throat, and speak of scarlet fever as anginose and malignant only.

Dr. Meigs believes that scarlet fever is propagated by epidemic influence, *i.e.* an aërial poison, and also by contagion. He has seen a child attacked who had never been out of the house at all, it being winter, and the child but five months old. A sister of the child sickened two days later, and a second sister on the third day. Direct exposure, in one sense, was certainly absent in the first-named instance, and our author does not state whether there existed any chance of the conveyance of the poison in fomites, as assuredly does sometimes happen. Thus, in one case, we have known the poison to be conveyed in a garment which was borrowed by Mrs. H. from a lady, in whose family scarlet fever existed, unknown to any one but the family and the doctor. In a second, and very singular example, Mr. E., and his son, aged eighteen years, bought some cakes in the street from a poor woman, who stated that she had made them to sell in order that she might collect a little money to bury her child. The two gentlemen eat of the cakes, and both fell ill of scarlatina nine days after. On strict investigation, it became known that the cakes were made and cooked in the room where the vendor's child had sickened, and then lay dead of a malignant attack of scarlet fever. We are inclined, let us add, to agree with Dr. Meigs in his view as to the possibility of this disease being contracted in either of the ways alluded to, but we also think that every case of supposed propagation by a generally diffused atmospheric influence should be scrupulously criticised.

In connection with this subject is another of much interest, but of which our author does not treat. It very often happens that those who wait upon bad cases of scarlatina become affected with sore throat, and sometimes with a coexistent fever of a few days' duration. We know physicians who are thus troubled whenever they have to attend upon malignant cases. Now, it appears to us possible that this may be in reality a modified form of the fever, occurring in protected or partially protected persons, and resembling thus the false vaccinations which are seen in many persons already vaccinated. However this may be, it is quite clear that such sore throats are not uncommon among the adult attendants of scarlatinal cases. We presume that they will be regarded by many as due to the direct effects of a poisoned atmosphere; but against this there is much to be said, and for it very little, save that the sore throat here described comes on within a period far short of the usual nine days' incubation of the typical scarlatina itself.

A still closer ally of scarlet fever is the scarlatina sinè exanthemata, which is spoken of by many authors. In this form there is no eruption, but we still have itching and desquamation of the skin, as well as sore throat. Dr. Meigs does not allude to this supposed variety, and perhaps rightly, for it is chiefly described by older authors, as Huxham, Fothergill, Rumsey, Lettsom, etc., and is very often, if not always, a scarlatina with a transient eruption. In fact, we once saw a case where the eruption, and that a slight one, was visible but for half an hour, although the attack identified itself as scarlet fever by terminating in dropsy and disease of the kidneys.

Before taking leave of the subject of contagion, we must add that many attempts have been made to innoculate this disease. The efforts at the Orphan House, in Charleston, in 1839, failed entirely, and Petit Radel succeeded no better. Andral states that Stoll was more fortunate; and J. Frank is said to have effected innoculation in dogs; but we have been unable to find their cases, and certainly canine scarlatina seems to us a sufficiently droll idea.

Dr. Meigs thinks that second attacks are more common than is at present supposed. He has seen three examples himself; whereas it is said that scarlatina recurs not oftener than once in a thousand cases. How many were seen in all, by Dr. Meigs, he does not tell us—not a thousand, we presume. It is a little curious that while most physicians here have seen one or more of these second attacks, Willan met with none in two thousand cases; Rayer has seen but one; Dr. Wood, of Edinburgh, in 1839, met with five instances of second attacks, out of only forty-five cases; and Mr. C. Sidney, in the same epidemic, encountered a number of such repetitions.

The question of the relative liability of the two sexes is one which, like almost every point in connection with the subject of contagion, is full of interest, and always difficult of explanation or answer. On the whole, it is best, we think, to view together the double query of liability as modified by age and sex.

Dr. Meigs thinks that scarlatina is most common between the ages of one and five years. Here, as in measles, the period of lactation seems to offer a partial exemption from attack. From this time onward, the two sexes suffer nearly equally, until the approach of puberty, and the period which follows it, when females appear to be more liable than males. This is scarcely a fair inference, although correct enough as a statement of a mere fact. Thus, of some two hundred cases, the proportion of attacks between the ages of six and ten was as seven males to eight females—but a small preponderance. Of the whole number diseased, however, one hundred and thirty-eight were females, and sixty-eight males. Thus, as we have said, the female is more liable after puberty than the male—a circumstance which is probably due to the greater exposure of women, into whose hands the nursing care of scarlatina falls, and who are, therefore, so to speak, in the very focus of infection.

Dr. Meigs next proceeds to distinguish between mild and grave forms. From two hundred and six cases recorded by himself, and from the facts supplied by others, he has given a description of the mild cases, which is very well done, and is a good portrait of the lighter form of the malady. Of grave cases, Dr. Meigs has noted fifty-seven—this class, of course, including scarlatina anginosa and scarlatina maligna. But as his account of the malignant variety possesses no new features, we shall pass on to a review of the sequelæ and complications.

"Dropsy," says our author, "is one of the most frequent and important sequelæ of the disease. It occurred in one-fifth of the cases of MM. Rilliet and Barthez, and in twenty-nine of the two hundred and sixty-three, or, in about a ninth, of those observed by myself."

This sequel of scarlatina is more common in some epidemics than in others. The last epidemic in this city was remarkable for the number of cases of this kind. We saw, for example, eight cases of scarlatina in the spring and early summer months of last year. Of these, four were dropsical. In one of these—already alluded to elsewhere—the eruption was visible for but half an hour, and there was no perceptible desquamation. The œdema of the face was noticed on the twenty-ninth day, and was followed by violent convulsions, which yielded to compression of the carotid arteries, after the warm bath, etc. had failed to be of use. The child recovered. Two of the remaining cases took place in one family, and all finally got well. In another instance, which we met with in 1855, the urine continued albuminous for six months, and until the child had been taken to the seashore. We believe that it is not rare to find the urine thus albuminous for some time after œdema is no longer perceptible.

Another point of interest in this connection, is the cause of the dropsy. Until a year ago, we were altogether disposed to think the dropsy a necessary result of the congestion of the kidneys, which always accompanies it. Since then, however, we have been in the habit of examining the urine every day from the time the disease declares itself, and we have twice observed the water albuminous before the least œdema was to be seen. In one case, the albumen was detectable on the twelfth day, while the œdema could only be observed on the fifteenth, and continued but four days—the urine remaining albuminous and slightly bloody for a much longer time.

We have also seen cases—two in number—where there was local dropsy—ascites—without albuminuria. Newbigging (*Ed. Monthly*) states the urine to have been albuminous in every case, and Begbie holds the same opinion. They speak of testing for albumen by heat only. It is scarcely possible that they neglected to employ also nitric acid. If they did not use both tests they may have been misled, since, in scarlet fever, the phosphates will very often be thrown down by heat. Nitric acid redissolves this precipitate, thus showing an absence of albumen. Martin Solon states that of twenty-three cases which he saw, twenty-two were albuminous.

Dr. Meigs's account of the symptoms which accompany or announce the presence of dropsy, is extremely good. As to the cause of the renal accompaniment, he does not undertake to decide; nor does he state here or elsewhere that a similar dropsical complication sometimes, though rarely, is seen in measles and erysipelas. As regards his account of the appearances afforded by the urine in these cases, we have only to add that it is scarcely so full or so complete as it might usefully be.

As a general rule, the urine is dark-brown or muddy, as Dr. Meigs describes it. This statement is true of this fluid at and after the crisis of the renal disease; but if Dr. Meigs will carefully note the state of the secretion every day until, in some instance, he lights upon the first signs of a coming congestion of the kidney, he will find that the urine is usually pale at first, then pink, then red, and finally of a very dark brown. In other words, the congestion of the kidneys comes on by degrees. When, as does sometimes chance, the attack is acute, the urine becomes bloody and deep hued with greater suddenness. From the period of the height of the congestion, the urine gradually becomes less brown and muddy, and deposits a sediment which in time is brown, yellow, ashen, and white, as the amount of blood diminishes. This deposit consists of altered blood-discs, epithelial cells, and fibrinous casts of the renal tubules, which are sometimes covered with blood-discs, and sometimes with epithelia. The presence of these casts is not spoken of by Dr. Meigs, nor does he remark at all upon the interesting and important changes in character which they undergo as the disease progresses or declines. We may also add, that the sediment very rarely contains "lithate of ammonia *in crystals*," as Dr. Meigs states, and that the deposit so called is now commonly considered to be lithate of soda, and to contain very little of the ammonia salt. It also is very rare to find either the one or the other of these compounds in a crystalline state.

Turning from the unpleasant task of noting defects, we are much pleased with our author's views as to the remedial means to be employed in scarlatina. If there is any deficiency here—and this is a matter of individual opinion—it is in regard to the freer use of baths, which we have used, in some cases as frequently as every hour, and which we are also accustomed in some cases to employ daily for three or four weeks. Johnson saw no cases of sequent dropsy, where this means was used. We have seen two, but are yet of opinion that the warm bath, when thus continued, lessens the chances of the secondary malady. On all other matters we are fully agreed with our author, and we believe that his essay well represents the most rational views of treatment.

Inunction, baths, and the use of chlorine, chlorates, ammonia, etc., are the means upon which he mostly relies. His report and criticisms upon the employment of cold baths are every way excellent, and we really regret that they are too long for transfer to our pages. Dr. Meigs does not appear to have used belladonna as a remedy during the disease.

Like our author, we are not prone to deplete in dropsical cases. It is a measure of doubtful value, and the child who has been drained by scarlet fever is not often a fit subject for the leech or the lancet. When the crisis is over, diaphoretics and cathartics are, in most cases, all that we require. In some instances the flow of blood from the kidneys goes on for months, the urine remaining dark or pinkish in hue, and the little patient growing weak and anæmic. Under these circumstances, tinct. ferri. chloridi, gallic acid, change of air, etc., are needed in addition to the usual means treated of by Dr. Meigs. Among these are also diuretics, which our author always employs in these cases, using acetate of potassa, bi-tartrate of potassa, squill, juniper berries, etc. We, also, have made use of these remedies, and in three cases have watched with care their effect upon the congested organs. The secretion was in no instance increased by them to a greater extent than when the quantity of pure water, which had accompanied them in the prescribed draughts, was given alone.

We are sorry that Dr. Meigs is not able to speak, from extensive use, of the value of belladonna as a prophylactic in scarlatina. He has only employed it within four years, and possesses no exact data upon which to form a definite opinion. We are glad to find that he leans to the belief that the evidence in favor of its success is such as to make its employment a matter of duty. We have gone over, with care, a large mass of evidence upon this subject, including many articles written since the publication of Dr. Peyre Porcher's most admirable paper, (*Charleston Med. Journal and Review*, 1851,) and we are still inclined to adhere to the use of belladonna. We had hoped, indeed, to make use of our materials in this review for the purpose of exhibiting how strong the presumptive evidence is in regard to its prophylactic value.. Want of time, however, warns us to dismiss the subject thus briefly, and we must, therefore, content ourselves with this simple expression of opinion, founded on considerable reading and some personal experience.

The remaining portion of our author's book deals with skin-diseases and worms. The article upon measles is a well-written account of this disease, and contains certain interesting facts as to the mortality, etc. of the malady in question. Dr. Meigs is of opinion that the rubeola sine catarrho of some authors is mere roseola. He has seen it only in infants. During 1857 it was epidemic in this city, and we saw a number of cases, chiefly among medical students, several of whom had already had measles. It is quite possible that Dr. Meigs may be right; and, at all events, the differential diagnosis between rose rash and the form of measles just mentioned is by no means easy.

The chapters upon small-pox, varioloid, vaccination, and re-vaccination, we have found to be extremely good,—the many mooted points in connection with these topics being fairly discussed, and treated with clearness and good sense. Here, as elsewhere, we are pleased with our author's criticisms and comments upon the indications presented by the disease, and upon the relative values of the remedies in common use.

In taking leave of a book in which we have found some omissions, some defective statements, and much that is excellent and worthy of praise, we feel bound in honor to mention that the author apologizes in his preface for his failure to treat of many points upon which he has collected ample material. Meanwhile, it is plain, from a comparison of this edition with preceding ones, that at every change Dr. Meigs has improved both as a writer and reasoner, so that, without doubt, any future re-issue will give to us the greater part of what the author has here omitted to treat of, or has dealt with insufficiently.

Let us finally thank Dr. Meigs for a sensible book about children. Poor little breeched or petticoated, stuffed, petted, bedizened, or half-naked little creatures, the share of the common sense of the world which is devoted to them and their service is small indeed. Let us, at least, do our best for them. Of parents, in this country, we have but little hope. Dead relatives and children are the luckless means of exhibiting the follies of friends and parents. As papa cannot don the kilt, and show his bare knees on Chestnut Street at 32° Fahrenheit, master Johnny serves to show what papa would like to do. The little women are no better used; and when the little body's dress gets up to the knees and down to the arm-pits, we may feel sure that it is typical of that primitive leaf which once represented the fall fashions, but we cannot concede to it the title of a dress.

As to medicine, and its rational uses among children, what can we say? Who does not know of many families where the quacks of Lilliput (would that Swift had known them) are the ordinary medical attendants of the children, while a physician of regular repute is as invariably called to prescribe for the parents and adults generally? Now this is a fact of very common occurrence, and, in the name of all absurdity, what does it mean? Is not this the very cream of folly? Is it really that the homœopath is supposed to be the next best doctor to nature, because he is thought to do nothing? Poor libelled nature! Or is it believed that little pills and little folks possess some mysterious medical relation?

But, admitting the existence of this singular illustration of maternal folly, when does homœopathy cease to be good for the child? At what age does scientific medicine become suited to the budding man or woman? Is there an era in growth, somewhere, which is suited to both at once, or to neither? Alas! would that, like the disciples of Hahnemann, we possessed remedies against folly and dullness, anger, melancholy, and the like, for then would we deal liberally to the mothers of all the babies everywhere such draughts of common sense as should materially lessen, in future, the profits of our profession.

ART. II.—*Experimental Researches Applied to Physiology and Pathology.* By E. BROWN-SÉQUARD, M.D., etc. etc. New York: H. Bailliere, 1853.

Researches on Epilepsy; Its Artificial Production in Animals, and its Etiology, Nature, and Treatment in Man. By E. BROWN-SÉQUARD, M.D., etc. etc. Boston, 1857.

Essays on the Secretory and the Excito-Secretory System of Nerves, in their Relations to Physiology and Pathology. By HENRY FRASER CAMPBELL, M.D., etc. etc. Philadelphia: J. B. Lippincott & Co., 1857.

WERE we asked to designate the man who, within the last ten years, has contributed most to our knowledge of the physiology and pathology of the nervous system, we should point unhesitatingly to Brown-Séquard. For, with a constancy worthy of the great subject to which he has devoted himself, he has persevered in his investigations, till he has succeeded in elucidating some of the most abstruse points connected with nervous action, and has thus not only corrected old errors, but has thrown a flood of light upon subjects which, previous to his experiments, were veiled in obscurity. We thus confess at the outset a partiality for our author,—a partiality, however, which, unlike many instances of the feeling, has something good and true to rest upon. We admire his keen sense of the method of conducting experimental investigations, his nice appreciation of the value of his results, and more than these, the genius which directs his observations aright and conquers success. We enter, therefore, upon the duty of noticing his labors with pleasure, and with the satisfaction which all reviewers must experience when they have to deal with that which is valuable and interesting.

The first-named of the volumes before us is a reprint of a series of articles, some of which were published originally in foreign journals, and subsequently contributed in a condensed form to the *Medical Examiner*, and of others, which appeared for the first time in that periodical. As the title indicates, they have reference to the physiology and pathology of the nervous system. They are based mainly upon experimental investigations, or original observations.

The first paper has reference to the "Source of the Vital Properties." After expressing the opinion that every tissue possesses its vital properties in consequence of its peculiar organization, and that in an animal of full development nutrition is the source of its vital properties, he adduces the following experiments in support of this view.

The first series was directed to the investigation of the source of the reflex action of the spinal cord. From these experiments he found that after restoring the circulation to the spinal cord, after its separation from the encephalon, the reflex faculty was also restored, even though this had been exhausted by putting it in frequent and energetic action; and that after dividing the spinal cord in the dorsal region of a mammal, and then killing it by dividing the carotid artery, reflex action was made to reappear, after it had entirely ceased, by injecting blood into the divided vessel. Hence, he very naturally concludes, "that the reflex faculty is a vital property belonging to the spinal cord, and that its source is in the nutrition which maintains the organization of this nervous centre." The tendency of these experiments is, therefore, to confirm the views of Marshall Hall, and others, in reference to the function of reflex action possessed by the spinal cord,—views which, at the present day, are of almost universal acceptance.

The source of the vital property of the motor nerves is next considered. Here it is shown, that although these nerves lose their vital power after separation from the nervous centres, they do so solely because nutrition is then badly performed. In proof of this view the fact is stated, in addition to others, that if, after the motor nerves of a limb have been divided and left dead for half an hour, or even more, the blood, having been stopped, is again allowed to circulate, the vital property of the cut nerves returns; and now in order to produce muscular contraction only a slight compression is necessary.

In the third place, the source of muscular contractility is considered. An experiment of a striking nature is related, which is strongly confirmatory of the opinion advanced, that muscular contractility is not due to nervous power, but to the action of the blood. The sciatic and crural nerves of a Guinea-pig were resected. After ten or twelve days it was ascertained whether they had lost their vitality, and whether the muscles still possessed contractility. These points determined affirmatively, a ligature was put around the aorta, and it was found that after a short time muscular contractility had disappeared and cadaveric rigidity had ensued. An hour afterward the ligature was removed from the aorta, and in ten or fifteen minutes the rigidity had disappeared and the muscular irritability was restored.

Some further experiments relative to the influence of the blood in restoring muscular contractility after it had entirely ceased, are given in Article XXVIII. of the series.

These investigations were instituted upon rabbits and Guinea-pigs, and in two instances on criminals who had been recently guillotined. From them it was ascertained that arterial blood, when injected into the blood-vessels, revived muscular irritability after it had entirely ceased for some hours. In the case of one of the criminals it was re-established seventeen hours and a half after decapitation, and in the other, twenty hours after death, contractility was present in the muscles of the arm.

Other experiments are stated, which are to the same effect. The whole series confirms the result arrived at by Kay, in a similar manner, and, we think, places beyond a reasonable doubt the truth of the view held by Haller, that muscular irritability is, to a great extent, independent of nervous action.

The experiments of Dr. Bennet Dowler, of New Orleans, upon this point, are also exceedingly satisfactory.

The experiments detailed in the third paper, relative to the influence of the nervous system over the functions of organic life, show conclusively that they are performed independently of nervous action. We regard the article relating to this subject as among the most important and interesting in the volume under consideration. Many experiments were made, the results of which are strongly confirmatory of the opinion advanced by the author. For instance, it was found that frogs lived perfectly well, and that digestion continued to be performed with regularity, after extirpation of the medulla oblongata, or of the ganglia of the par vagum. A young cat continued to live for three months after the spinal cord, from the eleventh or twelfth dorsal vertebra, to its termination, had been entirely destroyed. In this animal, during the whole of the above period, the urine continued to be regularly secreted, and was of normal character. This, of course, proves that the separation of the urine from the blood is not due to the action of the spinal marrow; and the results of other experiments are stated, which show that this function is not kept in operation through the agency of the medulla oblongata. Some further researches relative to the continuance of life in animals after the removal of the medulla oblongata, are given in the sixteenth article.

In relation to the mode of action of certain poisons, Brown-Séquard, from numerous carefully conducted investigations, draws the conclusion that the convulsive poisons appear to excite convulsions not by acting directly on the muscles, or on the motor or sensitive nerves, but only on that part of the nervous system endowed with the reflex faculty. Their action, therefore, is indirectly exerted. Brown-Séquard makes the very interesting remark, that he has seen animals die from the effects of strychnine without being at all convulsed. We are not aware that this has been observed by others. The fact is exceedingly important, especially as regards its legal relations, and deserves further investigation. We have killed different animals—dogs, rabbits, birds, frogs, etc.—with strychine, but have always found strong convulsive action produced.

We might refer to other papers in this volume of fully as great interest as those to which we have alluded, but want of space prevents our doing more at present than noticing the concluding article, "On the Cause of the Beatings of the Heart."

In this paper Brown-Séquard advances the opinion that the heart is put in action by an excitant existing in the blood, and that this excitant is carbonic acid.

There are several facts, noticed by observers in this country some years since, which have a bearing upon the cause of the heart's action, and to which it may not be out of place to refer. In 1823, Dr. J. K. Mitchell found that the heart of the sturgeon, after it had ceased to beat, could again be made to pulsate by inflating it with air, and that the heart of the snapping-turtle (*testudo serpentaria*) pulsated strongly when filled in succession with oxygen, hydrogen, carbonic acid, and nitrogen. Professor F. Gurney Smith has also experimented in regard to this subject, and has ascertained that the heart of the sturgeon will continue to pulsate for twenty-two hours after its removal from the body, and that of the snapping-turtle for twenty-six hours. The experiments of Dr. S. Weir Mitchell and Dr. T. H. Bache are also of great interest, as confirming those of Tiedemann, relative to the influence of the atmosphere in exciting contractility in the heart after it had been made to cease by putting it under the receiver of an air-pump and exhausting the air. All these investigations, as well as many others which have been performed in reference to this point, show conclusively that Haller's doctrine, which attributed the exciting cause of the heart's action to the direct agency of the blood acting upon its cavities, is not to be regarded as correct, and gives a good deal of probability to the view advanced in the paper before us.

Brown-Séquard brings forward several facts, which he considers support his hypothesis. They may all be regarded as tending to show that during asphyxia, when, as is well known, there is an accumulation of carbonic acid in the blood, there is an accelerated rate of action of the heart. Any one may convince himself of the truth of this statement by holding his breath for a few seconds. It will be found, that during the suspension of respiration there is a very perceptible increase in the number of pulsations in a given time, and that on readmitting the air to the chest a striking diminution in the number of beats takes place. In fact, (as we have noticed for some years past, and as the investigations of Reid and Mitchell also show,) the action of the heart is invariably slower during inspiration than expiration. This, however, may be due to obvious mechanical causes.

Although we cannot regard the evidence at present before us as definitely establishing the truth of Brown-Séquard's theory, we must admit that it gives it a strong appearance of probability. The function of the heart is so readily affected by nervous agency that it is extremely difficult to investigate it in the living animal with that extreme precision which the subject requires. The least emotion, the slightest attention even to its throbbings, disturbs its regular action, and may, consequently, lead the observer into error. No one, however, has investigated the problem with greater success than Brown-Séquard, and we confidently expect from him more perfect and convincing experiments upon the subject.

The second of the volumes before us contains the results of a series of investigations relative to the artificial production and treatment of epilepsy. The papers composing it were published during the past year in the *Boston Medical and Surgical Journal*, and are now first presented to the profession in a collected form. With three papers contained in the volume we have just noticed, (and which we omitted to consider with the other articles of the series in order to refer to them more appropriately here,) these memoirs exhibit a complete view of the author's researches relative to epileptiform affections.

It is over six years since Brown-Séquard ascertained (*Experimental Researches Applied to Physiology and Pathology*, p. 36) that by making a transverse section of a lateral half of the spinal cord of a Guinea-pig, or a complete section of this organ, an epileptiform affection of an exceedingly violent character was produced after a few weeks. He has since ascertained that the following named injuries of the spinal cord are capable of originating this disease:—

> "1st. A complete transversal section of a lateral half of this organ.
>
> "2d. A transversal section of its two posterior columns, of its posterior cornua of gray matter, and of a part of the lateral columns.
>
> "3d. A transversal section of either the posterior columns, or the lateral, or the anterior alone.
>
> "4th. A complete transversal section of the whole organ.
>
> "5th. A simple puncture.
>
> "Of all these injuries, the first, the second, and the fourth seem to have more power to produce epilepsy than the others. The first, particularly, *i.e.* the section of a lateral half of the spinal cord, seems to produce constantly this disease in animals that live longer than three or four weeks after the operation. After a section of either the lateral, the interior, or the posterior columns alone, epilepsy rarely appears, and it seems that in the cases where it has been produced there has been a deeper incision than usual, and that part of the gray matter has been attained. In other experiments (few in number) the section of the central gray matter (the white being hardly injured) has been followed by this convulsive disease. I have seen it but very rarely after a simple puncture of the cord."—P. 4.

The affection generally begins in the course of the third or fourth week, occasionally a few days sooner. At first only the muscles of the face and neck are involved, but the spasms continue to increase in violence and extent, and finally all parts of the body not paralyzed are convulsed.

> "Convulsions may come on either spontaneously or after certain excitations. The most interesting fact concerning these fits is that it is possible and even very easy to produce them by two modes of irritation. If we take two Guinea-pigs, one not having been submitted to any injury of the spinal cord, and the other having had this organ injured, we find, in preventing them from breathing for two minutes, that convulsions come on in both; but if we allow them to breathe again, the first one recovers almost at once, while the second continues to have violent convulsions for two or three minutes, and sometimes more. There is another mode of giving fits to the animals which have had an injury to the spinal cord. Pinching the skin in certain parts of the face and neck is always followed by a fit. If the injury to the spinal cord consists only in a transversal section of a lateral half, the side of the face and neck which, when irritated, may produce the fit, is on the side of the injury, *i.e.* if the lesion is on the right side of the cord, it is the right side of the face and neck which are able to cause convulsions, and *vice versa.* If the two sides of the cord have been injured, the two sides of the face and neck have the faculty of producing fits when they are irritated. No other part of the body but a portion of the face and neck has this faculty. In the face the parts of the skin animated by the ophthalmic nerve cannot cause the fits; and of the two other branches of the

trigeminal nerve only a few filaments have the property of producing convulsions. Among these filaments the most powerful in this respect seem to be some of those of the suborbitary and of the auriculo-temporalis. A few filaments of the second, and, perhaps, of the third cervical nerves, have also this property of producing fits. In the face the following parts may be irritated without inducing a fit: the nostrils, the lips, the ears, and the skin of the forehead and that of the head. In the neck there is the same negative result when the irritation is brought upon these parts, in the neighborhood of the median line, either in front or behind. On the contrary, a fit always follows an irritation of some violence, when it is made in any part of a zone limited by the four following lines: One uniting the ear to the eye; a second from the eye to the middle of the length of the inferior maxillary bone; a third, which unites the inferior extremity of the second line to the angle of the inferior jaw; and a fourth, which forms half a circle, and goes from this angle to the ear, and the convexity of which approaches the shoulder."

We have indulged thus largely in quotation because we thought it desirable to lay the main points of the author's researches before our readers in his own words. It will be seen how very important the views are which he enunciates, and how surely they rest upon facts. The connection of epilepsy with disease or injury of the spinal cord is distinctly pointed out, and is deserving of attentive consideration, both as regards the pathology and treatment of the disease.

The fact that this connection has not been more frequently remarked is probably due to the circumstance that the spinal cord is so infrequently examined after death, and to the difficulty which has hitherto existed of detecting certain radical alterations of the substance of this organ. Several very striking instances are however adduced, to show that a relation between disease or injury of the spinal cord and epilepsy does exist, and from these cases, and his own investigations, Brown-Séquard draws the following conclusions:—

"1st. There cannot be any doubt that in animals certain injuries to the spinal cord frequently produce an epileptiform affection, if not true epilepsy.

"2d. That in man there are a great many cases which seem to prove that alterations of the spinal cord may cause epilepsy."

Attention is called to the analogy existing between the aura epileptica in man, and the peculiar excitation produced by pinching the skin of the face of animals whose spinal cords have been injured. It would appear that in these animals the convulsions were the result of reflex action, and from a number of cases subsequently quoted it seems that the same explanation of their cause is applicable to man.

While insisting upon the probability that in man epilepsy may be dependent upon alterations of the spinal cord, Brown-Séquard denies the existence of any distinct species of this disease as arising from such affections, and after stating the main points of several of the more prominent theories of epilepsy, especially those of Todd and Marshall Hall, and enlarging somewhat upon their deficiencies, proceeds to give his own hypothesis. This theory is not proposed as complete, but simply as aiding in the elucidation of some of the principal questions connected with the disease under consideration. We will endeavor in few words to lay a summary of his views before our readers.

The brain is not essential to the production of epileptiform convulsions, for after its removal fits may be caused in animals whose spinal cords have been injured, with as much ease as before, by pinching the skin of the face or neck. Slight convulsions may also be induced by the same means, if, in addition, the cerebellum, and even the whole basis of the encephalon, except the medulla oblongata and pons varolii, be taken away. It results, therefore, that the epilepsy of the animals submitted to experiment had its seat either in the pons varolii, the medulla oblongata, the spinal cord, or in all three of these organs together. Facts, however, are not wanting to prove that epilepsy does not always reside in these parts collectively, or in any one of them, and, consequently, that irritation or injury of these organs may exist without epilepsy necessarily ensuing.

> "If we neglect the nature of the convulsions, and take notice only of the parts of the body where they first occur, we arrive at the conclusion that the seat of epilepsy is very variable. Usually, however, the first spasmodic contractions occur in the muscles of the larynx, of the neck, of the eyes, of the chest, of the face, and in the blood-vessels of the brain proper, as we will show hereafter; and as these parts are animated by nerves coming from the encephalon, and from the upper parts of the spinal cord, it seems that the seat of epilepsy is in some of these parts, if not in all. But the seat of this disease may be in other parts of the spinal cord, as seems to be proved by the production of the first spasmodic contractions in one of the limbs, either the inferior or superior. After the first spasms, all the muscles of the body may be attacked with convulsions; so that if we take notice of the loss of the actions of the brain proper, there is ground for thinking that the seat of the disease is both in those parts of the cerebro-spinal axis, where reside the faculties of perception and volition, and in those endowed with the reflex faculty; but this view is right only in appearance. We have shown already that the loss of perception and volition does not prove that epilepsy has its seat in the brain proper; we will try in a moment to show the great probability that a contraction of the blood-vessels of the brain proper, due to an irritation of their nerves in the spinal cord and medulla oblongata, causes the loss of the cerebral faculties, and, as regards the increase of the reflex faculty, we will show that a partial and a local increase is sufficient for the production of fits."

In the opinion of Brown-Séquard, epileptic fits always result from an excitation of the cerebro-spinal axis, though this excitation may arise from chemical and physiological changes occurring in the elements of the nervous centres, in consequence of bad nutrition and other causes.

As an irritation of the simple direct motor side of the cerebro-spinal axis cannot give rise to general convulsions, the convulsive movements which result from direct excitations of the nervous centres, as well as those which ensue upon irritations coming from peripheric nerve-fibres, should be regarded as reflex. "The so-called centric and eccentric causes of excitation of epileptic fits both act on or through the sensitive or excito-motory side of the cerebro-spinal centres, and consequently both act on the reflex faculty of these centres, so that they both ought to be called reflex excitations."

After some further remarks relative to the distinction between *reflex force* and *reflex excitability*, and in regard to a *special kind of excitation* acting on the nervous centres, the opinion is expressed that there are these three distinct causes for the production of a fit; that the first two are the more frequent, and perhaps the first of these two, viz. *reflex excitability*, is essential.

The application of these views to the explanation of the several phenomena of an epileptic convulsion, is next dwelt upon. The arguments adduced are very much to the point, and deserve attentive consideration.

The following table, in which the principal phenomena of a fit, and the immediate causes giving rise to them, are concisely stated, is given. A glance is sufficient to explain it:—

CAUSES.	EFFECTS.
"1. Excitation of certain parts of the excito-motory side of the nervous system.	"1. Contraction of the blood-vessels of the brain proper, and of the face and tonic spasm of some muscles of the eye and face.
"2. Contraction of the blood-vessels of the face.	"2. Paleness of the face.
"3. Contraction of the blood-vessels of the brain proper.	"3. Loss of consciousness, and accumulation of blood in the base of the encephalon and in the spinal cord.
"4. Extension of the excitation of the excito-motory side of the nervous system.	"4. Tonic contraction of the laryngeal, the cervical, and the expiratory muscles, laryngismus and trachelismus.
"5. Tonic contraction of the laryngeal and of the expiratory muscles.	"5. Cry.
"6. Further extension of the excitation of the excito-motory side of the nervous system.	"6. Tonic contractions extending to most of the muscles of trunk and limbs.

"7. Loss of consciousness and tonic contraction of the trunk and limbs.	"7. Fall.
"8. Laryngismus, trachelismus, and the fixed state of expiration of the chest.	"8. Insufficient oxygenation of the blood, and general obstacle to the entrance of venous blood in the chest, and special obstacle to its return from the head and spinal canal.
"9. Insufficient oxygenation of the blood, and many causes of rapid consumption of the little oxygen absorbed, and detention of venous blood in the nervous centres.	"9. Asphyxia.
"10. Asphyxia, and perhaps a mechanical excitation of the base of the encephalon.	"10. *Clonic convulsions everywhere*, contractions of the bowels, of the bladder, of the uterus, erection, ejaculation, increase of many secretions, efforts at inspiration.
"11. Exhaustion of nervous power generally, and of reflex excitability particularly, except for respiration. Return of regular inspirations and expirations."	"11. Cessation of the fit; coma or fatigue; headache; sleep."

It is well known that after frequent attacks of epileptic convulsions various disorders of the mind and senses are produced. These are due to the diminution in the amount of blood circulating through the brain in the beginning of an attack of epilepsy, the circulation of black blood through the nervous centres, and pressure upon the encephalon and spinal cord by the accumulation of blood in their vessels.

The *treatment* of epilepsy it is proposed to consider more fully at another time. A few propositions are, however, announced, which consist, when the disease is of peripheric origin, in recommendations for the interruption of the venous connection between the part where the aura originates and the nervous centres, and counter-irritation in the neighborhood of this part; application of moxas along the course of the spinal cord; modification of the nutrition of the nervous centres by medicines which act on the blood-vessels, such as strychnia, atropia, ergot, etc.; trepanning in certain cases; cauterization of the mucous membrane of the larynx; hygienic measures, etc., are also advised. The apparent connection existing between epilepsy and intermittent fever is pointed out, and the generation of this latter disease, with a view to eradicate the former, is recommended. During the fit the best means to prevent or diminish asphyxia are the dashing of very cold water in the face, and the inhalation of chloroform.

We have thus endeavored to present an outline of Brown-Séquard's researches into the physiology and pathology of the nervous system,—an outline which any one who refers to the works in which they are contained will discover is very incomplete. Though some of his views may be incorrect, they are founded on actual experiment and observation, and are, therefore, entitled to a degree of consideration which possibly they might not otherwise deserve. Those of our profession who, feeling how much remains to be done in physiological science before medicine can pretend to certainty, will peruse these volumes with interest, and with the conviction that the specialties considered could not have fallen into more able and energetic hands.

The work of Dr. Campbell, which we now propose to consider, consists of three papers contributed by him to the *Transactions of the American Medical Association*, and a letter to Dr. Marshall Hall in relation to Dr. Campbell's claim to priority in the discovery of and naming the excito-secretory system of nerves. They are now, for the first time, published in a collected form.

The first essay is devoted to the consideration of the nervous system in febrile diseases, and is intended as an introduction to the more elaborate paper which follows it, entitled "An Inquiry into the Nature of Typhoidal Fevers." It was submitted to the Association as a "partial report" upon the subject, from the committee of which Dr. Campbell was chairman.

In this paper, all fevers are arranged into two grand divisions, corresponding to the two grand divisions of the nervous system.

1st. The cerebro-spinal fevers: under which head are embraced all paroxysmal fevers.

2d. The ganglionic fevers: comprising all continued fevers.

Dr. Campbell contents himself at present with merely announcing this classification, and offers no evidence in support of his views. He, however, alludes to the blending of the types of fevers as being easily explainable by his theory. For this purpose, he assumes the propagation of the irritation originally located in the spinal cord, and inducing a paroxysmal fever, to the ganglionic system, and thus giving rise to a continued fever, and *vice versâ.*

Although there is a considerable amount of plausibility in this hypothesis, it is at present entirely unsupported by facts. We trust, however, that Dr. Campbell will investigate the subject more thoroughly, and present us a well digested theory based, in part, at least, upon original observations and experiments.

In the second paper, the title of which we have just mentioned, Dr. Campbell enters more fully into the subject, and has really produced an elaborate essay. Beyond the hypothesis advanced as to the pathology of typhoidal fevers, and which is almost entitled to be considered as original, the whole paper is, however, a *résumé* of the observations of others. We must dissent *in toto* from the opinion enunciated by Dr. Campbell relative to original investigations. He appears to think that by studying the recorded observations of others truth is arrived at with greater certainty than by investigating phenomena ourselves. We think this is a great error—one that, if acted upon, would do much to retard the progressive advancement which so especially marks the science of the present era. The discovery of a law probably requires a higher degree of intellectuality than a facility for observing tangible facts or for performing experiments. Yet we find that almost all great laws and sublime truths were established by those who possessed these qualifications in an extreme degree. A Newton, a Kepler, and a Franklin, would probably have remained in their original obscurity if they had studied only the observations of others. We think, too, that error is much more apt to ensue in the deduction of conclusions, if original research be neglected. Dr. Campbell rejects experiment for the assumed reason that we are too apt to distort our facts to suit our theories. This is doubtless true of some; but those who would deal thus with their own facts, would certainly not be less scrupulous with the facts of others. Besides, arguing upon Dr. Campbell's presumption, how do we know that the observer whose investigation we refer to, and upon which we build our hypothesis, may not himself have been writing with a view to the establishment of a favorite doctrine.

We think, therefore, that experiment, and the promulgation of laws and truths deduced therefrom, are best when connected in the same individual; and that, *cæteris paribus*, he is the best law-giver who possesses the greatest amount of self-acquired experience.

The first thirty-four pages of the essay before us are taken up with descriptions of the symptoms and anatomical lesions observed in the typhoidal fevers. These are very carefully expressed, and evince a great deal of research and study of the best authorities on the subject. We do not know where there is contained, in as small a compass, so complete a history of what has been done on the subject, and so good an epitome of the views entertained by those who have given it most attention.

The next eight pages are devoted to the anatomy and physiology of the sympathetic nerve. This, like the preceding part, will be found to contain the substance of what is known upon the subject.

Eleven pages are given to the pathological deductions from the facts previously stated. The most important of these is, "that typhoidal fevers result from alterations in the condition of the ganglionic nervous system." An opinion is also expressed, that typhoid and typhus are merely different types of the same disease located in different parts of the ganglionic system.

As we before remarked, we regret that Dr. Campbell has not presented us with a series of well-conducted experiments, or original observations of post-mortem appearances, in support of his theory. Without these, his views, however reasonable, cannot be accepted as demonstrated truths, but must be placed by the side of the numerous other unsubstantiated hypotheses which cumber the archives of science.

We come next to consider the most important paper in the volume, viz. the essay on the excito-secretory system of nerves. To this memoir one of the prizes of one hundred dollars was awarded by the American Medical Association, at its last meeting.

In the first place, the pre-eminent value of observation over experiment is asserted. We have already noticed Dr. Campbell's views on this point; but, while differing with him in the main, we do not wish to be understood as attaching an undue estimation to experiment. Without a sufficient acquaintance with the subject to be investigated, or care in the process itself, experimental research is worse than useless; for from it erroneous deductions may be drawn which years will not rectify. We do claim, however, that a good experimenter is almost invariably a good observer; and that observation is never more valuable than when going hand in hand with experiment.

Our readers will, we think, be unprepared for the opinion of Dr. Campbell, that there is already a sufficient accumulation of facts in physiological science, and that nothing remains to be done but the arrangement of these facts into one harmonious system. We are sure Dr. Campbell enunciated this view without due reflection, and not from an insufficient acquaintance with the present state of physiology.

We will not dwell upon the numerous facts brought forward to show the intimate connection existing between the ganglionic system of nerves and secretion—a connection which has gained for the sympathetic the very appropriate name of secretory. Dr. Campbell appears to have well considered and studied this portion of his subject, and good use is made of the material at his disposal. The experiments of Magendie and others relative to the nutritive function of the fifth pair of nerves, are reviewed at length, and their application to the views held by the author is very appropriately made.

The excito-secretory function of the sensory system of nerves is next considered. This is Dr. Campbell's great discovery. Although others had previously noticed manifestations of this power, Dr. Campbell has undoubtedly the merit of having first viewed it in its true light. The importance of this discovery can hardly be over-estimated, and it appears strange, as is the case after every valuable revelation, how it could so long have been overlooked. We have inquired most carefully into all the facts and observations relative to it, and we have pleasure in stating that we have nowhere found the excito-secretory system of nerves distinctly pointed out till Dr. Campbell commenced his essays on the subject. We have no sympathy with those who, having years since made use of some indistinct expressions admitting of almost any construction, follow in the wake of him who states his ideas with clearness and precision, and endeavor to deprive him of the credit which is his due.

We quote the following passage from Dr. Campbell's essay, in illustration of his view, and as clearly setting forth his discovery:—

> "The cerebro-spinal system has been subdivided into two portions, viz. the nerves of sensation, and those presiding over muscular action. A *relation* has been discovered to subsist between these two portions of the nervous system, by virtue of which the sensory nerves have been found to act as excitors to the motory; and hence this system has been termed by Dr. Marshall Hall the *excito-motory* system of nerves. Now, as we hope to set forth more fully in the present discussion, these same sensory nerves are not only excitors to the *motory* system, but under certain circumstances most of them sustain an analogous relation to the *secretory* nerves, exciting them and modifying their action, diminishing, increasing, and altering the secretions according to the extent and character of the excitation applied. It will be our object, then, to show that the sensory nerves, or at least some of them, sustain to the other two portions of the nervous system a double relation; first, excitors to the motory system, giving rise to the excito-motory system described by Dr. Marshall Hall, in 1837; and secondly, excitors to the *secretory* system, resulting in the excito-secretory system, enunciated first in this country in the year 1850; and which second system Dr. Marshall Hall did not appear anywhere to recognize until the present year 1857."

In the ensuing pages of the essay, Dr. Campbell abundantly establishes the existence of the excito-secretory system of nerves. He seems to be fully aware of the great value of his discovery; and the relations of the system which he has pointed out, to physiology and pathology, are ably and clearly shown. We are sorry we cannot follow Dr. Campbell in his observations. We must, however, content ourselves by commending his essay to our readers, as containing much interesting and valuable matter.

We cannot but regret that Dr. Campbell, by neglecting experiment, lost the brilliant opportunity—which Bernard knew so well how to improve—of demonstrating his discovery to the world. Had he been more active in this respect, no doubt could possibly have arisen as to his claim to priority; and he would not have been obliged to make the admission that he had, in no instance, tested the chemical properties of the urine of teething children. The suggestion, however, which he makes, that in cases of an increase in the quantity of urine from this cause, it will probably be found to contain sugar, we have recently had an opportunity of verifying, in a child now under our notice.

The letter to Dr. Marshall Hall hardly calls for any special notice at our hands, especially as Dr. Campbell's claim to priority in his discovery has been so generally recognized, and by no one more fully than by Dr. Hall himself. We therefore bring our article to a close. In the words of Dr. Hall, "There is in the excito-secretory function, as applied to pathology, an ample field of inquiry for his [Dr. Campbell's] life's career, and it is indisputably his own. He first detected it, gave it its designation, and saw its vast importance." May we not hope that Dr. Campbell, by original observations and experiments, will make this subject so inseparably connected with his name, that none in future will presume to question his claim.

ART. III.—*Pathological and Practical Observations on Diseases of the Alimentary Canal, Œsophagus, Stomach, Cœcum, and Intestines.* By S. O. HABERSHON, M.D., London, Fellow of the Royal College of Physicians; Assistant Physician to Guy's Hospital, and Lecturer on Materia Medica and Therapeutics; Late Demonstrator of Morbid Anatomy, and Curator of the Museum at Guy's, etc. etc. London, 1857.

IF monograph writing, in medicine, be, like differentiation in physiology, a mark of advancing development, we are, surely, on the ascending grade. Time was, when the library of the practitioner need not contain other than a few treatises on "Practice," "Surgery," "Inflammation," "Fevers," etc., with, if he were learned, the writings of the "early fathers" in medicine, and of the English, French, Italian, and German classics: all a moderate number of volumes. Now, although the scope of systematic treatises is widened, and their desiderata not altogether supplied; although we have not yet (the labors of Billing, Henle, Chomel, Simon, Williams, and Stillé not forgotten) a complete Text-Book on the Principles of Medicine, yet an annual harvest of special essays fills our shelves and our minds with facts in all departments. Undoubtedly, they are all welcome; especially those proceeding from real laborers in the field, such as Stokes, Budd, Handfield Jones, Chambers, and others in Great Britain, or Gerhard, Bartlett, La Roche, Flint, and others with us.

The writer of this volume "On the Alimentary Canal," is evidently one of the *workers* in medicine and pathology. Several of his papers have already appeared in the Guy's Hospital Reports; they are here extended and amplified, so as to constitute a volume of nearly four hundred pages, upon all the important diseases of the stomach and bowels. The volume does not exhaust the subject; it ought not to be expected to do so; but it contains chiefly the record of closely followed experience, with only occasional reference to the observations of others. The writer has so devotedly adhered to the scalpel and microscope as to have allowed himself, we should judge, less culture in the use of the pen; since we meet with occasional awkwardness, even incorrectness, of style, and a total absence of fluidity in diction.

We are glad to meet, in the Preface, with a suggestion in regard to the *Dynamics* of pathology; whose almost total neglect, in ordinary pathological works, is the more remarkable, since in physiology the study of *force* occupies now so large a space. Anatomy cannot, alone, interpret disease.

"Changes produced by perverted nutrition, or altered vital forces, are in many instances of such a character that no examination of the structure itself could discern the state which had been produced; as fruitless would it be to search in the nerve of a limb for the altered force which had led to spasm, as to expect to find a telegraphic message by a microscopical examination of the wire; although the structure of both had been transiently modified by the disturbance of the force they transmitted."

A brief sketch is given, in the Introduction, of the anatomy and physiology of the stomach. Remedies addressed to its morbid state are divided into—

1. Agents used to check fermentative or chemical action.
2. To remove offending or injurious materials, or excreta.
3. To correct or improve the secretions from the mucous membrane, or those poured into the canal.
4. To affect the muscular coat and its movements.
5. To alter the state of the circulation, and vessels or absorbents.
6. To act on the abdominal sympathetic.

An important, even if trite, remark is here made, in regard to the coincidence and connection of different diseases.

"It is far from frequent to find that a patient has died free from all disease, except the one which has been the immediate cause of death; it is, indeed, the exception to find such a case. It may be, that an acute inflammation of the lungs has led to fatal results, whilst chronic disease may have been going on in the abdomen, the heart, or the brain, perhaps quite independently, but having an important influence on the curative or non-curative condition of the disease: chronic disease creeps along with unobserved step till some acute affection proves fatal. This relation of disease is worthy of our consideration in studying the affections of the alimentary canal; and we may find that the diseased conditions arrange themselves in the following manner:—

"1. They take place simultaneously in the same body, without any connection; mere coincidents.

"2. The connection may be that of different manifestations of the same disease in its progressive action, rather than a really different diseased condition.

"3. One disease may have important modifying or predisposing influence upon another.

"4. Several organs may be affected simultaneously by one exciting cause.

"5. One disease may be antagonistic of another.

"6. Other diseases, or abnormal conditions, are conservative the one to the other."—P. 9.

The last category might have been omitted; as the examples given under it, of adhesions preventing perforation by ulcers of the stomach, ileum, or gall-duct, ought rather to be considered as physiological than morbid.

Chapter II. is devoted to Disease of the Œsophagus. The causes of *dysphagia* are very varied; it resulting as follows:—

I. From disease of the tonsils or palate.

II. From diffused inflammation of the cellular tissue of the pharynx or œsophagus, or from local suppuration, sometimes in connection with disease of the spine.

III. From disease of the laryngeal cartilages, or epiglottis.

IV. From functional or spasmodic stricture of the œsophagus or pharynx, as in hysteria, hydrophobia, etc.

V. From paralysis of the muscles.

VI. From acute inflammation of the mucous membrane.

VII. From mechanical injury or poisons.

VIII. From structural obstruction to the œsophagus, as—

1. Contraction.
2. Ulcerations, sometimes communicating with the larynx.
3. Cancerous disease.
4. Obstruction from the pressure of aneurismal or other tumors.

Two cases, both fatal, are narrated, of *inflammation of the cellular tissue of the neck;* which, associated with pyœmia, or with erysipelas, is either diffused or attended with abscess.

"The latter produces sudden and urgent dyspepsia, with febrile disturbance; and on examining the throat we observe a projection from the posterior fauces sometimes on a level with the soft palate, sometimes above or below it; the diagnosis is then sufficiently evident, and, when it is possible, puncturing the abscess relieves the urgent symptoms.

"When the inflammation is diffused, the patient rapidly passes into a typhoid condition, the dysphagia becomes extreme, the respiration impeded, and, on examining the neck, we find either the erysipelatous redness of the skin, or a fullness and tenseness among the infra-hyoid muscles, impeding the free movement of the parts concerned in deglutition. The examination of the neck will generally enable us to distinguish the dyspnœa arising from this cause from that produced by disease of the larynx, or trachea, or from pressure or injury to the nerves of respiration."—P. 14.

Disease of the *epiglottis*, with ulceration, is mentioned as having been, in chronic phthisis, mistaken for organic disease of the œsophagus, in consequence of the distressing rejection of food. This condition is often relieved by inhalation of steam, or by the fumes of conium or stramonium; in less severe cases astringent gargles, or the application of a strong solution of nitrate of silver, afford comfort by diminishing the extreme sensibility, counter-irritation being also of service.

In the treatment of *spasmodic stricture of the œsophagus*, Dr. Habershon considers the use of bougies as not generally beneficial; sometimes detrimental, by tending to perpetuate and aggravate a state of spasmodic irritation and contraction,—unless we can in this way introduce nourishing food into the stomach. Morbid appearances in the *pharynx* were noted in the autopsy of a case of hydrophobia, in Guy's Hospital.

> "The organ appeared more than twice its natural capacity; the constrictor muscles retracted to the utmost; the fauces exceedingly large, from the rigid contraction of the soft palate; and every part appeared expanded to the utmost. The mucous membrane was injected, and covered with some mucus. The œsophagus, also, was contracted; the lungs entirely congested; the other viscera healthy; but there was emphysema of the neck."

We have seen this emphysema of the anterior cervical region, in a case of hydrophobia, in a boy eight years of age. What is its explanation?

In the treatment of Dr. Habershon's case, it may be mentioned, by the way, that *cannabis indica* was employed, ten grains at a time, by enema, without obvious result.

Inflammation of the mucous membrane of the œsophagus has not been recognized by the author after death, except in one case of diptheritic gastro-enteritis, in which the pharynx and tonsils were covered with a white film (torula) spread upon an injected mucous membrane. In the management of apthous inflammation, Dr. Habershon confirms the reports of Drs. Hunt, Golding Bird, and others, upon the value of the chlorate of potassa.

Destruction of the mucous membrane by mechanical or chemical agents, if it do not destroy life by its primary action, is apt to be attended by inflammatory thickening and contraction, producing annular constriction of the œsophagus. The injury done by corrosive acids, or by boiling water, to this canal and to the stomach, is more often the cause of death than the harm effected in the larynx. A case is related which was fatal on the eleventh day, after swallowing sulphuric acid. Another survived the ingestion of an ounce of nitric acid for three months, dying from the secondary effects. An instance of recovery is also mentioned, after swallowing a mouthful of nitric acid. We have met with one equally remarkable, in which an eager drink of commercial oil of vitriol was taken by a boy, by mistake for porter. The symptoms were those of intense dyspnœa and aphagia, with cough, vomiting, and fever, lasting several days, but followed by recovery, without secondary symptoms.

Annular constriction of the œsophagus is described as resulting from the effusion of fibrinous material into the submucous cellular tissue—this tissue contracting and becoming exceedingly dense. The tube above dilates, and, the obstruction increasing, at last passage of food becomes impossible. Unless enlightened by the history of the case, Dr. Habershon knows of no direct symptom by which annular stricture can be distinguished from so-called cancerous disease.

Ulceration of the œsophagus, producing death by perforating the trachea, is illustrated by several specimens in the Museum at Guy's. The cases were not cancerous; the main symptom had been difficulty, at last impossibility, of deglutition: the attempt producing urgent dyspnœa, food being forcibly ejected through the nares. An interesting case is quoted from the "Pathological Transactions" for 1852:—

> "A young woman, æt. twenty-five, had ulceration of the œsophagus, which extended into the pericardium, and led to sudden syncope and death. For three months she had nausea, dysphagia, occasional vomiting, and pain at the top of the sternum and at the epigastrium. Solids were swallowed with much difficulty. There was found, after death, simple ulceration, without contraction; the ulcer had extended from the bifurcation of the trachea nearly to the diaphragm, and had perforated the pericardium. No other organ was diseased."

Dr. Haberson remarks, that many persons complain of pain at the upper part of the sternum, on swallowing, in whom no trace of pressure or aneurism can be found—the symptom disappearing under the use of tonics, sometimes with iodide of potassium. The idea of cancerous growth being precluded, slight ulceration of the œsophageal mucous membrane was inferred.

The emaciation, dysphagia, and distress, in severe ulceration of the œsophagus, are identical with those connected with cancerous disease; they occur usually, however, in younger persons. The treatment of the ulceration is exceedingly unsatisfactory; the administration of nutrient enemata prolongs life only for a short time. The operation of œsophagotomy is a very difficult one, and, in many cases, if performed, would be ineffective—the disease being at the root of the lung, or behind the first bone of the sternum. The propriety of forming a gastric fistula in such cases is worthy of serious consideration: it appears warrantable, when it would afford a chance of life to those who have otherwise only a prospect of certain death. In the human subject, several cases of gastric fistula, accidentally produced, have been recorded, and experimenters upon animals make such openings without the production of severe peritonitis.

In *cancer of the œsophagus,—*

"There is pain at the sternum, in the back, sometimes in the upper part of the throat; dyspnœa comes on, when the trachea or bronchi become involved; the dysphagia and emaciation increase, and after six or seven months the disease proves fatal. Sometimes death occurs by inanition, the dysphagia having become complete; more frequently, by the extension of the disease to the bronchi, and setting up sloughing pneumonia, or by the pneumogastric nerves becoming destroyed; or, finally, by the ulceration extending into the trachea, and thus leading to fatal laryngitis. Loss of voice becomes a well-marked symptom only in those cases where the disease is situated at the base of the pharynx, extending into the larynx at that part. The part of the œsophagus which is most fixed by its connection with other organs is at the root of the lungs, and it is there that cancerous disease is most frequently found."—P. 29.

Hœmatemesis is sometimes a symptom of cancer of the œsophagus. In cancerous obstruction, we do not generally find much distension of the canal above the seat of the disease, the food being quickly regurgitated; while in annular obstruction after poisoning, etc., large dilatation occurs, the disease being more chronic, and the sensibility of the surface less.

Epithelial cancer was the form observed by Dr. Habershon in nearly all his cases. He believes that degeneration of the papillæ may account for the presence of some of the clusters of cells noticed, with greater probability than the endogenous mode of growth usually supposed. Schirrus and colloid are occasionally observed—the latter, only at the termination of the œsophagus.

The frequency of pulmonic complication was remarkable. In only one case out of thirteen did death appear to result from inanition; nor was this case free from disease of the lungs.

In seven there was pneumonia.
" two " gangrene of the lung.
" one " acute bronchitis and laryngitis.
" one " pleurisy.
" one " cancer of the lung, with great congestion.
" one " death from inanition.

Pressure on the pneumogastric nerve, or its destruction, extension of the disease to the bronchi, septic changes in the blood from the sloughing of the cancer, or the coincident existence of strumous disease in the lung—explained these complications. Of these thirteen cases, eight were men; their average age, fifty-six. Five were women; their average age, forty-three. The longest period between the commencement of dysphagia and death was fourteen months. Marked benefit was found to accrue from abstinence from solid food, or dependence, for a few days, upon nutrient enemata—the dysphagia being thus materially lessened.

The occasional coexistence of cancerous disease with "strumous pneumonia" or phthisis, was illustrated in three cases, in two of which vomicæ were observed; not actively progressing, however, at the time of death. Other analogous instances are given in the chapter on the stomach.

The *pressure of aneurismal or other tumors*, as a cause of dysphagia, and the possible occurrence of rupture of an aneurism into the œsophagus, producing sudden death, are briefly noticed and illustrated,—a caution being thrown out with regard to the use of the bougie, lest the latter accident be precipitated.

Gastric solution of the lower end of the œsophagus may be the cause of perforation and death. Only two cases, however, of this occurred at Guy's in three years. One was a case of fever, the other of hydrocephalus. Wilkinson King, in the "Guy's Reports," and Dr. Budd, in his "Diseases of the Stomach," have elucidated this subject. The position of the body, the development of gases in the intestines pressing upon the contents of the stomach, the non-contracted state of the œsophagus itself, are causes which may produce the passage of the gastric juice into the œsophagus. Sometimes this pressure has even forced the contents into the pharynx, whence they gravitate into the trachea and bronchi.

A case of *rupture of the œsophagus* from over-distension is given; the patient being an intemperate man, who died shortly after an immense supper.

Chapters III. and IV., comprising ninety-two pages, are occupied with Organic and Functional Diseases of the Stomach. Their consideration is preceded by some well-timed remarks upon the mode of examination of the stomach after death, and the need of caution in interpreting its microscopical appearances. In many examinations Dr. Habershon has found appearances precisely corresponding to the descriptions and drawings of Dr. Handfield Jones; but he thinks that many of these appearances may be produced by the mode of making the preparation, or by changes after death.

> "I refer to wasting of the follicles, nuclear deposit around them, and the development of cysts. The gastric follicles change very rapidly, and in a short time nothing can be observed but the termination of the follicle itself upon the submucous areolar tissue, and above this an irregular aggregation of granules and nuclei. The basement membrane also rapidly becomes dissolved. . . . . The greater curvature of the stomach is in this way generally too much changed to allow us to place much dependence upon its microscopical examination; and for this reason it is evident that we have to avail ourselves of portions of membrane above the line of solution."

Atrophy and *fatty degeneration* are treated of with considerable minuteness. The symptoms presented in connection with the latter are, a sense of great prostration and exhaustion, with complete loss of appetite; the tongue clean; no pain, or thirst, or vomiting, but inability to take food; vomiting has sometimes taken place, but possibly from other causes. It has been observed "in phthisis, struma, exhausting suppuration, and often associated with fatty liver."

Post-mortem solution of the stomach by the action of the gastric juice was noticed even by John Hunter. The amount of solution depends, in part, on the amount of gastric juice in the stomach at the time of death. The action is much more rapid in summer than in the cold of winter. Dr. Pavy's remarkable experiments,* showing that the gastric juice will act upon living tissues, as the ear of a rabbit, the leg of a frog, etc., are considered by Dr. Habershon as not conclusive: we cannot see, however, the reason for this demurrer.

The action alluded to is stated by Dr. Budd to be checked by alcoholic liquors, or by medicines administered before death. It is most manifest in children, and with inflammatory disease of the brain, and is usually more marked in acute than in chronic disease.

In the treatment of *inflammation* of the stomach, becoming subacute or chronic, Dr. Habershon speaks favorably of the palliative influence of *lemon-juice;* which relieves the epigastric pain and distress.

Acute gastritis from corrosive poisoning was observed to pass to a fatal termination in many instances *without any pain* at the stomach, unless perforation had taken place. This absence of pain was very striking in a case in which death was produced by chloride of zinc.

Ulceration of the stomach is treated of as either "superficial," or "aphthous, or follicular." The history of these affections, and their treatment, agrees with that of the works of Drs. Budd, Chambers, and Brinton; especial reference being made to the investigations of the latter. The modes of termination of ulcer of the stomach, in fatal cases, were pointed out by Abercrombie:—as, 1. Gradual exhaustion; 2. Hemorrhage; 3. Perforation into the peritoneal cavity. Dr. Habershon adds a 4th: The production of inflammation by extension to the adjoining viscera. Some cases, however, will be protracted for many years; while in cancer, after well-marked symptoms, a year seldom elapses before death takes place.

An instance is mentioned of chronic ulceration of the stomach, extending to the diaphragm, in which the physical signs were those of pneumothorax.

In the management of gastric ulcer, the greatest stress is laid by Dr. Habershon on the management of the *food.* *This* being attended to, *medicine may* often be with advantage omitted. Horse-exercise, in mode-ration, is recommended. Does not this, however, admit of question, since the pain is so generally increased by movement?

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* Guy's Reports, vol. ii. Third Series.

If perforation occur, there is yet a bare possibility of recovery; the opiate treatment being the one relied upon. Dr. Hughes and Mr. Hilton have recorded, in the "Guy's Reports," a case in which perforation was supposed to have taken place, yet the patient recovered. We have seen one in which recovery occurred, after the discharge of a large amount of pus from the umbilicus.

Sloughing of the mucous membrane of the stomach is hardly to be met with, except as the effect of caustic poisons.

Fibroid degeneration of the pylorus is described, clearly, as differing both from cancer and from true hypertrophy. The fibrous deposit, or thickening, commences in the submucous cellular tissue. This obstructs the valve, and hypertrophy of the muscular coat then follows. The symptoms closely resemble those of cancerous obstruction. The causes of this affection are unknown. Intemperance has not been proved to promote it, and it occurs at various periods of life. In treatment, palliation may be obtained by the use of only fluid and unirritating food, and by such medication as is approved in the treatment of chronic ulceration—viz. the use of bismuth, conium, hydrocyanic acid, opium or morphia, creasote, alkalies, oxide or nitrate of silver. Dr. Jenner has pointed out the value of the sulphite of soda in checking the fermentative action which attends imperfect digestion. It may be given in scruple doses.

The mucous membrane of the stomach not unfrequently gives origin to *polypoid* growths; but their detection during life must be extremely difficult.

Every form of cancer is observed in the stomach, but medullary and schirrous cancer are the most frequent; epithelial, villous, colloid, and melanoid being more rare. These varieties, however, are known to pass into each other. The diagnosis of cancer is often, in the earlier stages, exceedingly obscure. Pain may be entirely absent throughout the whole case. Chronic ulceration usually occurs at an earlier period of life than cancer: in six cases of the former, the ages were 37, 32, 28, 36, 39, 25; in five of the latter, 40, 62, 65, 37, 47. From 35 to 55 is the age at which cancer, in any organ, is most frequently manifested.

Dr. Brinton has shown that males are more subject than females to cancer of the stomach, in the proportion of two to one. It is shown, also, by his statistics, that the pylorus is the most common seat of cancer; the lesser curvature and posterior surface, that of ulcer.

The evidence of cancer is most marked when the pylorus is affected, producing obstruction. Vomiting of blood is more frequently observed in connection with ulceration than with cancer.

A number of cases are given, in the work before us, to illustrate the varieties of cancerous disease of the stomach. Among these is one—considered to be intermediate between medullary and villous cancer—confirming the view of Paget, that the latter may be merely a variety of the more common form.

The conclusions arrived at upon the subject of gastric cancer are the following :—

> "1. That the symptoms of cancerous disease of the stomach may be extremely slight, and the disease easily overlooked. 2. That the indications are more marked where the orifices are affected. 3. That in most cases death takes place from exhaustion or asthenia. 4. Total hemorrhage and perforation are more rare than in ulceration of the stomach. 5. That the absorption of degenerating cancer-structure sometimes leads to symptoms resembling pyœmia. 6. That some of the distressing symptoms may be alleviated; but that over-active treatment appears to hasten the fatal termination."

The IVth Chapter, upon "Functional Diseases of the Stomach," is chiefly occupied with dyspepsia; without containing anything, however, so novel in regard to it as to require our present attention. The *fermentation* of the contents of the stomach, dependent on imperfect digestion or unhealthy secretion, is distinguished, with Drs. Budd and Turnbull, into four varieties: 1. The formation of sulphuretted hydrogen by simple putrefactive decomposition. 2. The formation of carbonic acid in ordinary fermentation. 3. Lactic acid fermentation, or butyric acid. 4. The formation of sarcina ventriculi. Alcholic and acetous fermentation, with the development of sarcina, once believed to be pathognomonic of diseased pylorus, have repeatedly been noticed where no obstruction existed. Dr. Habershon has seen closely allied forms in the fluid on a healthy mucous membrane after death. A case of *infantile dyspepsia*, with sudden collapse, not fatal, is given; the symptoms being produced by firm coagulation of milk in the stomach and duodenum.

The *impeded movement of the stomach* is not sufficiently considered as a cause of dyspepsia. It is traceable in some cases of hernia; in tight lacing; and in those occupations which require a constrained position. When the stomach is placed vertically, its semi-digested contents are more readily impelled, prematurely, through the pylorus. Ascites and ovarian dropsy may also impair digestion by interfering with the movements of the stomach.

In some cases of over-distension from flatus, the muscular coat of the stomach is unable to contract, or becomes paralysed. But it must be borne in mind that this tympanitic state sometimes arises from inflammation coming on insidiously, and involving the muscular as well as the peritoneal coats, as in some instances of strumous diathesis. Dr. Habershon has seen several cases in which this took place, death resulting, without any pain from the commencement to the close. Such cases, which occur in youth as well as in middle life, might readily be mistaken for ordinary dyspepsia with flatulence.

Hœmatemesis originates in either of the following causes:—

1. It arises from ulceration of the stomach.
2. From congested or obstructed portal circulation.
3. From vicarious menstruation.
4. From cancerous disease.
5. From vitiated condition of the blood, as in purpura.
6. From aneurism.

Melœna is described as depending on hemorrhage into the stomach, from which the darkened blood passes down into the stools. Blood effused directly into the bowels does not assume this dark color. A case is related in which hœmatemesis and melœna were connected with cancer of the liver. Patients seldom die from simple hœmatemesis.

Chapter V. treats of the *Duodenum.* It is Dr. Habershon's opinion that there are symptoms of disease justly considered as arising from this portion of the alimentary canal; and that in some cases we may, with care, satisfactorily diagnose that it is the seat of disease. This occurs, however, seldom in isolation from affections of other parts, especially of the stomach, liver, heart, etc. After burns, the duodenum has been found greatly congested, sometimes ulcerated. Chronic congestion of the same tube is not unfrequently observed, along with pulmonary or hepatic congestion, or disease of the pylorus, whether fibroid or cancerous. The duodenum has sometimes been found, after death, filled with blood, extravasated from an artery opened by ulceration.

In jaundice, after exposure to cold, or after great intemperance, with vomiting, pain in the right hypochondrium, furred tongue, loathing of food, and diarrhœa, not only the stomach, but the duodenum may be irritated and congested, if not inflamed. In the treatment of these cases, Dr. Habershon considers mercurials to be rather detrimental than advantageous; bland nourishment, alkalies, and mucilaginous drinks will afford relief.

Violent acute inflammation of the duodenum is met with in practice only after the administration of poisons.

Ulceration of the duodenum must be remembered as a source either of fatal perforation or of intestinal hœmorrhage. Adhesions frequently take place between the first part of the duodenum and the gall-bladder; and, in some, ulceration extends from the gall-bladder into the duodenum, allowing the passage of calculi; and the gall-bladder is, in some cases, entirely obliterated.

Mechanical obstruction is more rare in the duodenum than in other parts of the intestines. It may result from large impacted gall-stones, enlarged cancerous glands, diseased pancreas, hydatids of the liver, or from foreign bodies. The most marked symptom in these cases has been the very early period at which violent bilious vomiting has supervened; the absence of distension of the abdomen is also a sign of the occlusion being high up.

Perforation of the duodenum occasionally takes place after death, from solution, by the gastric juice passing through a patulous pylorus.

Enteritis is considered in the VIth Chapter, under the heads of Erythematic Enteritis, or *Muco-enteritis*, and Severe Acute Enteritis. The former corresponds with the gastric fever, or infantile remittent, of writers. The latter may be quite dangerous, involving all the coats of the intestine. Its most intense form is seen when a portion of the intestine becomes strangulated.

Internal or external hernia, intussusception, or mechanical obstruction from any cause, may be confounded with simple enteritis. In internal strangulation, the pain generally comes on after sudden exertion; in internal obstruction without strangulation, we often find previous constipation, and the commencement of the attack is slower—the pain being sometimes slight till toward the close. In intussusception, the sudden severe pain is more like that of colic than of enteritis; and the discharge of bloody mucus is often observed, as pointed out by Mr. Gorham.*

The diagnosis between *muco-enteritis* and *hydrocephalus* is not always easy. In cerebral distubance accompanying the former, however, we have, commonly, emaciation, diarrhœa, a half-closed eye, and collapsed fontanelle; and the earliest symptoms are those not of cerebral, but abdominal disease.

In acute enteritis, leeching, and bleeding from the arm, are spoken of as advantageous. The author is, therefore, not yet *Bennett-ized.* The chlorate of potassa is highly commended in the muco-enteritis of children.

Chapter VII. is devoted to *Strumous Disease* of the Alimentary Canal, including that of the Mesenteric Glands and Peritoneum. In one hundred cases of phthisis, only thirteen had the intestines healthy. It is only in "pneumonic phthisis," or galloping consumption, that the alimentary canal escapes the effects of the constitutional disease. The bowel affection, however, does not necessarily keep pace with that of the lungs. Matter of much interest upon this subject might be extracted, did our space allow it. In the diarrhœa of phthisis, Dr. Habershon recommends the injection of borax or charcoal, with barley-water.

Diseases of the Cœcum and Appendix appear in Chapter VIII. Contrary to the experience of Tiedemann and Gmelin, Dr. Habershon has found the secretion of the cœcum *alkaline* in reaction. There is, to his mind, no warrant for the statement that the cœcum constitutes a second stomach, in which digestion is completed.

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* Guy's Reports, 1858, p. 30.

The appendix he considers to be an elongated gland, of a very simple character, analogous to the pancreatic cœca of the intestine of the fish; so far as is at present known, its secretion is ordinary mucus. Its action appears to be, to prevent adhesion of fœces to the parietes of the intestines.

Ulceration commences more frequently in the *appendix* than in the cœcum itself. The appendix may also be elongated, atrophied, dilated, or filled with concretions. The latter may be either—1. Extraneous, such as nails, pins, stones of fruit, bristles of a tooth-brush, entozoa, or, most frequently, fœces. 2. Formed in the appendix; as concrete or albuminous mucous. 3. Calculi, generally with a fœcal or foreign nucleus. Many of the so-called cherry-stones are of this character. However produced, such concretions may lead to very serious results, by exciting irritation, ulceration, perforation, or suppurative inflammatory action, ending in fœcal abscess. In phthisis it is very common to find ulceration of the appendix cœci.

Important points in the diagnosis of cœcal disease are elucidated, for which the reader must be referred to the work itself. There are few matters more trying to the diagnostic acumen of the practitioner. One paragraph may be quoted:—

> "The neuralgic pain connected with urino-genital disease is not accompanied by the tenderness or other symptoms of intestinal affection. It is, however, sometimes difficult to distinguish inflammatory disease about the right ovary from cœcal disease. There may be, in both, excessive tenderness, febrile excitement, constipation, severe pain in the lower part of the iliac fossa. The symptoms which will serve to guide us are, that the ovarian disease comes on with irregular menstruation or with sudden cessation of that flux, and that the pain is situated lower down in the hypogastric region;—in some cases even, observers have believed that they have felt the swollen ovary. Dr. Barlow records a case in which peritonitis of such a severe character was set up around an inflamed ovary that the patient succumbed. In cancerous disease of the cœcum, which sometimes occurs in young subjects, it is almost impossible, unless there be indication of cancerous disease in other parts, rightly to diagnose its character. These are, however, rare cases. In strumous peritonitis, the disease is not confined to one part of the abdomen; but in severe cases, the intestines are so completely united by peritoneal adhesion as to move *en masse*."—P. 208.

When collapse and tympanites evince perforation of the intestine, rest, the avoidance of aperients, and the use of opium, perhaps with calomel, are advised. The detection after death of foreign substances in the appendix, without apparent injury having resulted, is not uncommon. Dr. Habershon has found there a pin, with its head downward and its point extending into the coats, half surrounded by fibrous membrane; in another instance an iron nail, etc.

A curious case is given, in which inflammation of the cœcum simulated *hip-joint disease;* the right leg being *rigidly* flexed at the thigh, in consequence of pain; and relaxing after leeching and poulticing the abdomen. Two instances are recorded, also, of protrusion of the appendix into the inguinal canal.

Diarrhœa is the subject of the IXth Chapter; being classified into diarrhœa *crapulosa, serosa, mucosa, biliosa,* and *dysenterica.* The causes of this affection are—1. Cold and wet. 2. Improper food. 3. Inanition or exhaustion. 4. Epidemic influence. 5. Endemic influences, such as effluvia from drains, etc. 6. Excessive secretion of bile, or of the glandular fluids. 7. Strumous disorder of the intestine or mesenteric glands. 8. Œdema or congestion of the mucous membrane, as in Bright's disease. 9. Mental agitation or fright. 10. Ulceration or cancerous disease of the large or small intestine.

Colitis and *Dysentery* are considered at length in Chapter X. The author does not admit the correctness of Dr. Parke's view, that, in true dysentery, ulceration, or, as Dr. Baly describes it, sloughing, is always present. Death may, although rarely, take place without destruction of the mucous membrane in any part. An elaborate history is given of the changes ordinarily presented in the dysenteric bowel.

The *sequelæ* of dysentery, when not fatal during the attack, are—1. Perforation of the intestine, and fatal peritonitis. 2. Fæcal abscess. 3. Gradual exhaustion from destruction of the mucous membrane. 4. Constipation, from contraction of cicatrices, leading to very troublesome and irregular condition of the bowels, and sometimes fatal obstruction. 5. Pyœmia, and suppuration in the substance of the liver, from the absorption of pus, as described by Dr. Budd. This last result Dr. Habershon has observed only once at Guy's, in simple English dysentery. It is more common in the tropical form. The author does not positively adopt the opinion that dysentery is contagious. He denies that it is a blood-disease, or of constitutional origin, any more than cancrum oris, or ulcerative stomatitis. This may be true of "English dysentery." We cannot, however, believe it so of the epidemic and endemic varieties, so common in many parts of this country, and elsewhere.

Besides hemorrhoids, *polypus in the rectum* and *fibro-cellular ulceration* may be mistaken for dysentery. In the treatment of the latter disease the measures most generally approved are described and recommended. From the experience of a number of severe cases, it is inferred that, in the worst cases of dysentery, astringents and opiates are ineffective; that injections and demulcent remedies afford considerable relief, and in mild cases will be sufficient, but are inferior in efficacy to astringents and opium; that rest, even in mild cases, is important; and that in the cases alluded to, as far as could be judged, mercurial preparations would have been injurious.

Under the title of "*Typhoid Disease of the Intestine*," we find described, in a short chapter, the usual lesions of typhoid fever. A case is mentioned, in which the patient was so little enfeebled as to walk about during the whole of the attack; yet he died of perforation of the intestine on the twenty-third day. Dr. Habershon strongly urges caution in the return to solid food or active movement; considering that by such precaution many lives may be saved.

Chapter XII. follows, upon *Colic*. The subdivisions of Dr. Copland are adopted, and a fair *rèsumè* is given of the semeiology, pathology, and treatment of the different varieties.

Constipation is well treated of in the XIIIth Chapter. Among other interesting points, a case is quoted from Mr. Staniland (*Medical Gazette*, 1832–3) in which for five years the patient had a passage from the bowels only once in two months.

Intestinal obstruction, in its numerous forms, is the subject of one of the most important chapters in the book. The causes of insuperable constipation are, mainly,—

1. Bands of adhesion, producing internal strangulation.
2. Twisting of the intestine, in either of three modes described by Rokitansky.
3. Mesenteric tumors, producing constriction.
4. Intussusception.
5. Cancerous disease of the intestine.
6. Contraction of cicatrix, as after dysentery or fever.
7. Enteritis and peritonitis.
8. Impaction of fæces, or foreign bodies, gall-stones, etc.
9. Obturator or other obscure forms of hernia.
10. Prolapsus ani, and inflamed hemorrhoids.
11. Abdominal or pelvic tumors.

The sign noted by Dr. Barlow, of the diminution in the quantity of urine excreted, when the obstruction is high up, is viewed by Dr. Habershon as not certain. A manual examination of the rectum is advised in all cases. Dr. Habershon has never met with an instance of one loop of intestine becoming twisted upon another as an axis. Peritonitis was observed to occur almost universally in fatal intestinal obstruction.

A specimen is alluded to, in the museum at Guy's, consisting of the whole of the cæcum and ascending colon, which were evacuated by a patient suffering from intussusception, but who, nevertheless, *recovered*. Forty-four inches of the large intestine were passed in another case. The *cause* of intussusception is believed to be, sudden spasmodic contraction of a portion of the intestine, impelled onward into a portion less contracted or altogether flaccid.

Cancerous disease is especially prone to attack the termination of the sigmoid flexure, at the brim of the pelvis. Scirrhus is the most frequent form, although medullary and colloid sometimes occur.

In regard to the diagnosis of the different varieties of obstruction,—

> "In *intussusception* there is generally more pain, like colic; there is discharge of bloody mucus, and a tumor is frequently felt at the affected part. In *internal strangulation* the vomiting is more severe, the onset more sudden than in cancerous disease, and frequently something is felt to have given way or slipped; there is greater resemblance to the symptoms of ordinary hernia; the small intestine is the part that is generally strangulated; and while the vomiting is more early and severe, the abdomen is less distended, and the course of the colon cannot be traced. In *impacted fœces* alone, unless some foreign body be also present, the symptoms rarely, if ever, become so urgent, and scarcely ever fatal."—Pp. 322–3.

In the treatment of obstruction of the bowels, Dr. Habershon objects to the employment of any but mild aperient medicines. Purgatives of all kinds, he considers, should be avoided; drastics tend only to aggravate the patient's sufferings, to shorten life, or to remove the remaining possibility of recovery. The administration of opium is relied on, as tending more than any other medication to the relaxation of spasm, and evacuation of the bowels. Injections, laxative and nutritive, are approved. Change of position, sometimes useful, requires caution, lest it incite to inflammation. The application of cold water or cold air, to the abdomen, has sometimes succeeded. In regard to operative interference, as practiced by Hilton and others, it is suggested by our author—1st. That the peritoneum is already inflamed, or intensely congested, and hence general peritonitis is almost certain to follow; and 2d. That there is a great difficulty in the diagnosis, and that some recover from apparently a dying condition. In Cæsar Hawkins's operations for stricture of the colon or rectum, by the production of artificial anus, out of forty-four cases, in ten, death took place within forty-eight hours; in twenty-one, within five weeks. Thirteen recovered, of whom six lived six months, and nine more than a year.

A brief chapter ensues upon *Intestinal Worms.* Dr. Habershon has found the *tricocephalus dispar* much less often than he was led to expect by other writers. In the treatment of *tape-worm,* at Guy's Hospital, turpentine and kousso have given way to the *oil of male fern.* This appears to be innocent, even in large quantity; a child, by mistake, took ʒiss of it every night for a week. No symptom except purging followed.

Chapter XVI. concludes the volume, with the discussion of the subject of *Perforation of the Intestine from without* This may proceed—

1. From strumous peritonitis.
2. From ulceration or cancer of the stomach.
3. From hydatids, or abscess of the liver.

4. From the penetration of gall-stones from the gall-bladder.
5. From abscess in the spleen, kidney, abdominal parietes, or loins.
6. From disease of the ovary.
7. From cancer, in various structures.
8. From extra-uterine fœtation.
9. From one portion of the intestine opening into another, as the appendix into the rectum.
10. From blows or external injury.

The diagnostic signs of these different affections are clearly described, and illustrated by examples. In the whole of the volume, one hundred and seventy-three cases are detailed, including every variety of abdominal disease—nearly all of them having occurred under the writer's own observation. They are judiciously selected, and briefly recorded, being illustrated, also, by three plates, prefixed to the work.

We take leave of Dr. Habershon with the conviction that his book is a decidedly useful one. Without the systematic fullness of Budd, or the vivacity of Chambers, he conveys a vast number of facts in an instructive manner. To wield the pen of elegance is an accomplishment which so ardent a pathologist may easily afford to leave to other hands.

ART. IV.—*A Theoretical and Practical Treatise on Midwifery, including the Diseases of Pregnancy and Parturition, and the Attentions Required by the Child from Birth to the Period of Weaning.* By P. CAZEAUX, Adjunct Professor in Faculty of Medicine, Paris. Second American Edition, translated from the Fifth French Edition, by W. R. BULLOCK, M.D. 8vo., pp. 751, with 140 illustrations. Lindsay & Blakiston: Philadelphia, 1857.

WE have wasted as much time as most men, but certainly have not to answer for having read all the books that have been written and published on the subject of midwifery. This prefatory statement is needed in order to let our readers understand that when we assert, as we do, that M. Cazeaux's book is the most complete *we* have ever seen upon the subject, we hold ourselves open to the correction of any of our brethren who may have read more thoroughly, and will apply their reading to the benevolent task of enlightening us.

The fact that this book has, in a short space of time, passed through five editions, gives it so entirely the stamp of public approbation that it would be almost useless to recommend to the attention of the profession what has been already so widely and justly appreciated.

M. Cazeaux's experience has been ample; his opportunities, owing, doubtless, to his great ability, such as are afforded to but few of us. "Where much is given much is expected," and certainly our author has, by the enlightened and diligent employment of his gifts, both natural and acquired, more than realized the very largest expectation that could have been cherished by his most ardent and interested admirers.

Some of our medical reviewers complain of custom, which requires that our modern obstetrical writers should make their books into encyclopædias, —that diseases of women and the hygiene of children should not have place in the same volume,—that he who can find a little on every subject in a single publication may read no other, and thus become a smatterer, but not a student. In reading M. Cazeaux's fifth edition we have no such fear; he is never superficial and careless: numerous as are his subjects, he sets to work upon them with the same indomitable energy, and never seems to consider one subject as worthy of greater care and reflection than another. We, ourselves, consider that most of the diseases of women take their most natural place between the same covers with a work on obstetrics, and certainly the hygiene of children as naturally succeeds; such a production as the science of cooking a beefsteak to perfection would follow the art of cutting it with skill.

So far we defend the custom of printing together the obstetrical treatise and the diseases of women, not omitting the hygiene of young children. But the objection to us, in this combination of subjects, is, it swells the volumes to such a degree that it becomes a formidable task to read, and a most voluminous one to review them. This feeling, no doubt, in part arises from our peculiar idiosyncrasy, and yet there is more than mere indolence in the objection.

The truth is, that the careful study and digestion of such a book as M. Cazeaux's could never make a superficial student fat; the real objection is, that when volumes are so large, the generality content themselves with looking at the title-page, reading the preface, looking over a few favorite subjects, such as hemorrhage, rupture of the uterus, etc., and then feel assured that they have mastered the contents of a great book!

It is this affectation of reading which chokes us up with smatterers,—not the careful perusal of such masses of well-considered truths and intellectual industry as the work before us contains.

M. Cazeaux divides his book into six parts. As usual, the first is devoted to the pelvis, external and internal; articulations, ligaments, etc. etc.; parts of generation, together with an account of the modifications undergone by the ovarian vesicles; with the concomitant changes of the uterus, the characteristic appearance and changes of the corpus luteum, necessarily including an excellent disquisition on the function of menstruation.

Part second includes simple uterine pregnancy. All the changes of the ovum; the old theory of the decidua, with the new theory proving that this so-called new formation is simply a thickening of the uterine mucous membrane; the fœtus and appendages; placenta, umbilical cord, etc.; functions of the child, and diameters of the head at full term.

Abnormal pregnancy takes its natural succession, together with lesions, accidents, and diseases, displacements, presentations, and phenomena too numerous even to name in the few pages allotted to a reviewer's agony.

Part third treats of labor in general; presentations and positions, physiological phenomena of parturition, together with the attentions necessary to the mother and child. This part contains very able remarks on face presentations, and much practical information which may be perused with advantage by practitioners as well as students.

Dyslocia is the heading of the fourth part. This is the most extensive division of the work, and contains a vast amount of excellent material, treating comprehensively and clearly of almost every species of difficulty belonging either to the mother's formations and organization, or the child's deformity or mal-position, which can possibly complicate a tedious labor. The articles on hemorrhage and puerperal convulsions are admirably written; that which treats of hemorrhage is, we think, by far the best on that subject that we have ever read, and we must beg to be excused if we occupy the doubtless valuable time of our readers for a short space by making some few extracts from it. The study of hemorrhage, its causes and efficient treatment, is one so fraught with interest to the practicing physician and accoucheur, that observations and opinions of a man of our author's vast experience and intelligence must be read with eagerness and respect by every one who has the sense and feeling to appreciate the vast and terrible responsibilities which are sometimes allotted to him.

Our author divides the symptoms of uterine hemorrhage into general and local. The general symptoms he describes as other writers have done, as chiefly consisting of sensations of fullness in the pelvic region, pains in the loins and thighs, bearing down, difficulty of micturition, etc. etc. These phenomena, which are characteristic of a local uterine congestion, are accompanied, as he observes, by symptoms of general plethora; that is to say, by pains in the head, vertigo, dimness of vision, flushing of the face, and by frequency and fulness of the pulse.

The local symptoms are divided into either external or internal. Of course we consider it as unnecessary to treat our readers to M. Cazeaux's definition of external and internal hemorrhage. When external, it will certainly speak for itself with sufficient clearness; but it is as certain that an internal flow of blood, particularly in the earlier months of gestation, might readily take place without detection, though, as M. Cazeaux says:—

"If the amount of blood should be considerable, the clot formed by the coagulation constitutes a foreign body, whose presence excites colicky gripings and pains in the loins, and a feeling of weight about the fundament; and these symptoms obstinately persist until a miscarriage takes place."

At an advanced stage of gestation, the writer observes that the hemorrhage may be so considerable as to produce a manifest enlargement of the abdomen, with, in some few cases, a well-marked fluctuation.

We confess that, under such circumstances, we should have little hope for either mother or child.

The doctor, on the subject of the seat of effusion, writes as follows:—

"The point at which the accumulation of blood takes place in these internal hemorrhages, that come on at an advanced period of gestation, must necessarily vary, according to the part of the utero-fœtal vascular apparatus which has been the source of the flooding;" (for instance,) "the blood may be effused primarily, between the uterine face of the placenta and the corresponding uterine wall; as the discharge progresses, it ordinarily dissects off the placenta toward some one point of its circumference, and is then effused all around the ovum by displacing the membranes. But it may also happen that the whole placental circumference remains adherent to the womb, while its central portion is entirely detached, the effusion being limited by the margins of this mass; the hemorrhage may be copious enough, in such instances, to kill the patient promptly.

"The blood may be effused into the tissue of the placenta, and constitute what has been called placental apoplexy. The woman's life is not compromised by such an accident; the death of the fœtus, and, as a consequence, its premature expulsion, would be almost a certain result."

Rupture of the umbilical cord is, of course, given as a cause of hemorrhage into the sac of the amnion. The author enters rather fully into the subject, and illustrates it by some interesting cases, which, in an article of this kind, we are compelled to omit. This rupture cannot affect the mother, but must, necessarily, be fatal to the child.

As this author denies the fact, so often repeated in our obstetrical books, that the neck of the womb begins to be, as it were, drawn out into its body at about the sixth month, and from that time gradually expands up to the period of gestation, at which time it has become the lower segment of the uterine ovoid, with only an aperture and ring to mark its location,—we say, as he positively denies all this, and maintains that the neck of the womb, though it gradually softens, does not begin its fusion into the lower segment of the organ until within a fortnight of full term, of course he cannot admit this development to be the cause, as hitherto supposed, of those frequently recurring hemorrhages which, in cases of placenta previa, take place during the three latter months of gestation. M. Cazeaux admits that these floodings do take place, but does not attempt to explain the why or the wherefore; the following passage is the nearest approach to an explanation that we can find:—

"The cervix uteri (considering the period of gestation) is usually thicker, softer, and more spongy, because the placenta, by becoming fixed over this point, determines there a more considerable afflux of blood."

The treatment of uterine hemorrhage (not unavoidable) has been so repeatedly discussed in books and lectures, that we cannot expect anything new upon the subject. M. Cazeaux tells us, as usual, to keep the woman quiet, use refrigerants, lay her on a hard bed, quiet her mind, and not to let her be made vexed or angry, if we can help it; in obstinate cases, when the flooding cannot be subdued by other means, recommends the administration of ergot, according to the advice of M. P. Dubois, whose opinion is that under such circumstances this medicine merely acts as a hemostatic, and does not produce uterine contraction unless uterine action has already commenced; in our opinion, a somewhat absurd position, for, if true, it would be perfectly useless in such a case. Indeed, the author himself seems to have an idea of its weakness, for he continues the subject after the following fashion:—

"Even supposing that it had this power, (the ergot,) that would not be a just ground of exclusion; for it must not be forgotten that the question before us is, that of arresting a serious accident—one which cannot continue without prejudice to both mother and child; and that the only other resource is the use of the tampon, which, even more than the ergot, would expose her to the hazard of a delivery before term."

All this is perfectly true, and renders the what we cannot help thinking over-nice distinction of the action of ergot somewhat frivolous; not that we deny M. P. Dubois's position, that ergot may have a hemostatic action apart from and independent of its peculiar action on the muscular contractility of the uterus; yet, at such a moment—for the author supposes that all other measures for arresting the flooding have been, to no purpose, tried—what, in the name of common sense, do we want but immediate and active contraction? for we maintain that at such a time the child's life is as a feather in the scale when weighed against the mother's; and no man should, in such a strait, attend either our wife, or daughter, or sister, who, to our knowledge, thought otherwise.

The author, in speaking of the special therapeutic measures to be used in flooding, says:—

"These vary, as stated, according to the abundance or trifling character of the discharge, and according to whether the latter is manifested in the course of the gestation or during labor. We shall first examine them during pregnancy."

Moderate hemorrhage, occurring in the last three months.

"If the flooding has been preceded by the general phenomena of plethora, and if, at the time the woman is examined, the pulse be found full, strong, and developed, the face flushed, etc.—in a word, if the hemorrhage appears to be owing to or kept up by the plenitude or morbid action of the vessels, it is necessary to have recourse to general venesection, which will act both as a revulsive and as an antiphlogistic; but this measure is recommended in those cases only in which labor has not yet commenced, and when the discharge is inconsiderable and has lasted but a short time. Blood-letting must be proscribed under the opposite circumstances, as also in those instances where the flooding is not associated with plethora.

"When the hemorrhage is not very abundant, and, as a consequence, when there is some reason to hope that the pregnancy will continue on its regular course, opiates may be administered; they might be given by the mouth, but it is much better, in general, to exhibit them by injection, in the dose of twenty drops of Sydenham's laudanum, diffused in a small quantity of some mucilaginous vehicle, and this may be repeated three or four times, at intervals of an hour or more, where the first has not been sufficient to arrest the symptoms."

A long experience, says Burns, enables me to recommend this measure in all cases where blood-letting is not practicable. Along with a strict regimen, such are the measures advised by M. Cazeaux, in cases of moderate hemorrhage, occurring in the last three months of gestation; he adds, they should be continued until it has entirely disappeared. Profuse hemorrhage occurring in the last three months—

"Where the flooding is more abundant the remedies to be employed are also more active; and to the measures already enumerated, except venesection, which, as before stated, must be rejected when the discharge is very profuse, we may now add," * * * *

"The application of compresses, steeped in some very cold liquid, to the upper part of the thighs, hypogastrium, or loins, (in one instance, M. Gendrin successfully administered an opiate injection at the temperature of melting ice,) and where the heat is very great, cold sponging over the legs, arms, and even the body. But the action of cold is not to be resorted to without discrimination, nor, as a general rule, should it be kept up for a very long time; because, although its application may be useful at the commencement of the attack, when the phenomena of local congestion are manifest, it would certainly prove injurious if a very copious and persistent hemorrhage had already enfeebled the patient, and if there was reason to fear the powers of life were giving way and that the woman was likely to sink into a state of complete prostration."

When the flooding cannot be arrested by other means, and the violence of the symptoms endangers the lives of both mother and child, the author, of course, recommends that the membranes should be ruptured, and admits the propriety of administering ergot.

M. Cazeaux speaks in high terms of the tampon, and gives minute directions as to the when and how it should be used. In cases of placenta previa, where the os uteri is too close to admit of turning, or the application of the forceps, he prefers its use to the employment of Dr. Simpson's suggestion—to detach the placenta completely from the internal surface of the uterus. In the course of the author's remarks on the distinguished Edinburgh professor, he says:—

> "Professor Simpson has proposed to separate completely and bring away the placenta, whenever its insertion upon the neck has given rise to a hemorrhage which threatens the life of the mother; although rather too absolute at the outset, Mr. Simpson has finally yielded to the numerous and valid objections made to his precept, so far as to confine its application to the following conditions:—1. When the flooding has resisted the principal measures, and especially the rupture of the membranes and evacuation of the waters; 2. When the slight dilatation or development of the cervix, or contraction of the pelvis, render turning or any mode of artificial delivery dangerous or impossible; 3. When the death or immaturity of the fœtus restricts the duty of the accoucheur to caring for the safety of the mother. It is, therefore, especially with primiparous females, in cases of premature labor or rigidity of the cervix, and of its spasmodic contraction, of organic narrowing of the pelvis or of the genital passages, of the death or non-viability of the fœtus, and, finally, of extreme exhaustion of the mother, that the artificial separation may be practiced. It is to be understood, he adds, that in case of separation or extraction of the placenta. the fœtus should be withdrawn immediately, unless the hemorrhage should cease, which it does in the great majority of cases."

Even with this reservation, M. Cazeaux does not approve of Dr. Simpson's advice, but thinks that when the flooding continues after the evacuation of the waters, and when the neck does not allow the hand to be introduced, there is some chance left of saving both mother and child by applying the tampon.

With all respect for the opinion of our author, we cannot help thinking that the idea of saving the child's life under such circumstances is somewhat chimerical.

In the midst of this vexed question we enjoy one consolation, that is, that though the precise mode in which it is to be effected is a fruitful source of argument, yet all authorities agree that when the placenta presents, and the woman is in danger, she ought to be delivered as soon as possible. The truth is, the student must examine carefully every authority on the subject. When he has done so with all the ability and industry of his nature, he will still find, when the hour of trial comes, that his success in practice will mainly depend on his own judgment and sagacity in seizing the right moment for employing the means of relief he may determine on.

This article closes with a table by Professor Dubois, a summary of the treatment of hemorrhages affecting the latter months of pregnancy and during labor.

This vade mecum, as it is called, is an excellent thing for young gentlemen who are not addicted to study, and old gentlemen who have no time to read.

The subject of puerperal convulsions is a very interesting one, and its causes, predisposing and exciting, are ably discussed.

Investigation seems to have proved that the presence of albumen, if constant, in the urine of pregnant women, ought to excite our suspicions of the possibility of convulsions.

The author says:—

> "Since albuminuria is present in the immense majority of eclamptic women, it, or rather the disease of which it is a symptom, may be rightfully regarded as the predisposing cause of eclamptic convulsions,—I say, the only known predisposing cause; for since attention has been fixed on this point, of all pregnant women those only who are affected with albuminuria (a few cases excepted) have been known to be attacked with convulsions."

Though all eclamptic patients have albuminuria, it is not insisted that albuminuria, however severe, necessarily gives rise to convulsions, for M. Cazeaux proceeds as follows:—

> "Happily, it is by no means uncommon for pregnant women to have the urine highly charged with albumen, without presenting a single convulsive symptom. Of 41 women with albuminous urine, observed by M. Blot, but 7 had convulsions; and of 20 mentioned by MM. Devilliers and Regnault, 11 only were affected with them. The latter gentleman, to be sure, examined the urine of such women only as were dropsical; and it is very certain that many cases of albuminuria are not attended with infiltration. Still, by taking the mean between these different results, and having regard to my own observations, I think that I come near the truth in saying that one out of every four or five patients with albuminuria will be affected with convulsions."

We indulged our readers to the foregoing quotations for the purpose of drawing their attention to a most interesting subject, and regret that time and space prevent our entering upon it more fully.

Of course, no striking novelty can possibly present itself in the treatment of puerperal convulsions.

The remainder of this fourth part is devoted to rupture of the womb, together with the mechanical and surgical part of the obstetrical science.

The fifth division of the book treats of the delivery of the after-birth. The article is long and elaborate, but its merits will amply repay a careful perusal.

The sixth part, and "Last scene of all that ends this strange, eventful history," is not "Second childishness and mere oblivion," though it is devoted to nursing, lactation, weaning, and the hygiene of children.

In an appendix the author discusses the subject of anæsthetics, of the use of which he speaks in terms of approval; alludes to Dr. Simpson, of Edinburgh, as the first to venture on the use of anæsthetics in labor, and quotes his mode of administration.

The book is well translated, and reflects great credit on Dr. Bullock's intelligence and industry.

ART. V.—*Human Histology in its Relations to Descriptive Anatomy, Physiology, and Pathology.* By E. R. PEASLEE, M.D., Professor of Physiology and Pathology in the New York Medical College, etc. etc. Philadelphia: Blanchard & Lea, 1857, 8vo. pp. 616.

THE aim of this excellent compendium, which, as far as we are aware, is the first complete manual or text-book upon histology which has emanated from an American pen, is to give a connected view of the simple chemical elements, of the immediate principles, the simple structural elements, and the proper tissues, entering into the composition of the fluids and solids of the human body; and to associate with the structural elements and the tissues their function while in health, and the changes they undergo in disease.

The work is divided into two parts. The first comprises the classification and description of the simple, chemical elements, and of the primary organic compounds, or immediate principles of which the various tissues and fluids of the human body are composed. The second part is devoted to the description of the tissues and fluids.

Dr. Peaslee arranges all the immediate principles into two groups. The first includes those principles which are crystallizable or volatile without decomposition, and is divided into two classes, viz.:—1. Principies of mineral origin, embracing various gases and salts; and 2. Principles of organic origin formed within the body by dis-assimilation or metamorphosis, and comprising certain acid and saline matters, such as lactic, uric, and hippuric acids, oxalate of lime, lactate of soda, etc., and all the neutral nitrogenized and non-nitrogenized, as well as the fatty and saponaceous compounds. In the second great group are classed all those principles which are not crystallizable or not volatile, except in consequence of decomposition. This group contains fewer substances than the first. It is made up of certain organic, coagulable principles, some of which are naturally liquid, as fibrin, albumen, albumenose, causein, pancreatin, mucosin, and ptyalin; others, solid or semi-solid, as globulin, crystallin, musculin, elasticin, cartilagein, ostein, and keratin; and others again are pigmentary, as hæmatin, biliverdin, melanin, and urrosacin.

The many substances enumerated in these two groups are each briefly and accurately described, and in a manner, moreover, that cannot fail to make the student well acquainted with the elementary composition of the body. The origin and uses of many of these substances, and the known pathological changes which they undergo in the body during the constant disintegration and reconstruction of the tissues, are also concisely stated.

The second portion of the volume is devoted to minute or microscopic anatomy. In the language of our author, "It is a treatise on Human Histology, both general and special, and, at the same time, both physiological and pathological." The first division of this part is occupied with descriptions of the simple histological elements, their distribution, development, etc. The second treats of the fluids of the human body which contain histological elements; and the third, of the tissues properly so-called.

The various structural forms presented to the histologist in the solids and fluids of the human fabric are discussed by Dr. Peaslee under the following heads:—1st. Homogeneous substance; 2d. Simple membrane; 3d. Simple fibre; 4th. Cells; 5th. The tissues proper.

Homogeneous substance, called also homogeneous matrix and hyaline substance, is a peculiar, structureless, and more or less solid matter, reresembling coagulated albumen, and found abundantly distributed in various parts of the body. It occupies the spaces between the cells of compound tissues, as cartilage and fibro-cartilage; constitutes a large part of cancerous masses; forms one of the elements of tubercle, and abounds in bone. It originates probably from the albumen of the blood, and serves to connect together various histological elements.

Simple, or *limitary* membrane as it is sometimes called, is a thin, delicate, and structureless layer of what appears to be solidified albumen. In it the microscope can detect neither pores nor openings of any kind whatever. Like the homogeneous, anatomical element, its optical properties are of a negative character. Its vital properties, however, are important, and its distribution extensive. It forms the posterior layer of the capsule of the crystalline lens, the walls of all cells, the myolemma of muscular, and the neurilemma of nervous fibres and tubes, and as a constituent of epithelium and primary, or basement membrane, it lines blood-vessels and lymphatics, and enters the lobes and follicles of all glands.

Dr. Peaslee, somewhat unnecessarily, as it appears to us, restricts the term *simple fibre* to those fibrous threads whose interlacement constitutes the *membrana putaminis*, or lining membrane of the egg-shell, or which are formed in coagulating fibrine as the result of the process known as fibrillation. Such a use of the term is objectionable, because it is thus rendered inapplicable to the white fibrous and yellow elastic tissues, which have always been selected as the best representatives of the simple fibre. This anatomical element, according to our author, "Is not a prominent constituent of the human body, but must be regarded as a merely temporary element, laid down as a framework on which higher histological elements may be developed, and which then becomes absorbed and disappears."

Chapter IV. is taken up with a description of cells, and their component structural elements. The endogenous, exogenous, and fissiparous methods of cell development are successively passed in review. Pathological developments of cell-nuclei, the growth and functions of cells, and the nature of their contents, and a descriptive account of pigment and cancer cells, complete this division of the book. The following varieties of the cancer-cell are recognized and described :—

1. The polygonal, or more or less spherical and ovoid cell.
2. The caudated cell.
3. The fusiform cell.
4. The concentric cell.
5. The compound, or mother cell.
6. Agglomerated nuclei, connected by granular homogenous substance.

In regard to the value of the microscope in the diagnosis of cancer, our author advocates in substance the judicious opinions originally advanced by Lebert, and now generally adopted.

The second division treats of the fluids of the human body. It is divided into four chapters, which are appropriated to the following subjects respectively :—1. The histological relations of the blood, including lymph and chyle. 2. Serous secretions, transudations, and exudations. 3. Mucous and glandular secretions. 4. Cutaneous secretions.

The *tissues* constitute the subject-matter of the third and last division, which occupies more than half the volume. Our author divides the tissues into the *simple*, composed of one histological element, whether cells, fibres, or membranes ; and the *compound*, consisting of two or more such elements. The compound tissues he subdivides into binary and ternary. Among the simple tissues, epithelium and white and yellow fibrous tissues find a place. Contrary to the views of most microscopists, the bones and teeth are also arranged in this class. The compound tissues include areolar and adipose tissues, cartilage, muscle, nerve, membranes, vessels, the alimentary canal and its apendages, the urinary, sexual, and respiratory apparatus, the ductless glands, and the organs of the senses.

In the three-fold division, general arrangement, and composition of the work under consideration, Dr. Peaslee has taken for his guides the original and justly celebrated works of Robin and Verdeil on the "Immediate Principles, Normal and Morbid, which Constitute the Body of Man and the Mammalia ;" of Lehmann on "Physiological Chemistry," and of Kölliker on "Human Microscopic Anatomy." Nor has he been unmindful of the special and more recent labors of Beale, Todd and Bowman, Bennett, Gray and others. It will be seen, therefore, that the volume thus briefly noticed fairly and adequately represents the science of human histology in its present advanced state. It is well "gotten up," and is embellished with numerous wood-cuts, of which none, however, can lay claim to novelty, while many are decidedly old and familiar acquaintances, whose ubiquity and tenacity of life are truly extraordinary.

ART. VI.—*Traité de Chimie Pathologique Appliqué à la Médecine Practique.* Par M. ALF. BECQUEREL et M. A. RODIER. Paris: Germer Baillière, 1854.

Pathological Chemistry in its Application to the Practice of Medicine. Translated from the French of MM. BECQUEREL and RODIER. By STANHOPE TEMPLEMAN SPEER, M.D., etc. etc. London: John Churchill, 1857.

FROM the deservedly high scientific character of its authors, the Pathological Chemistry of Becquerel and Rodier might, without examination, be presumed to merit an elevated position as a treatise, and it might be presupposed that by presenting a digest of our actual knowledge upon the subject it would fill a void which has hitherto existed in this department of medical literature.

The reader, however, who having formed such opinions, takes up this work with the confident expectation of having them confirmed, will, we think, be disappointed. Although it contains a great deal that is valuable, presented in a clear and concise manner, it is lamentably deficient both as a book of reference and as a guide to the analysis of pathological formations, or of the fluids and solids of the body in disease, and is, consequently, far from attaining to that standard of excellence which all scientific treatises of the present day must reach, if their authors desire to obtain for them a high appreciation from readers.

In order to show that we are not speaking loosely, it is only necessary to state that nowhere is any mention made of Trommer's test for diabetic sugar, of Liebig's for urea, or the slightest allusion made to the exact and convenient analytical processes by test-solutions, now so generally employed in the examination of the urine. The subject of urinary calculi is barely touched upon, and scarcely any directions given for their analysis.

From a neglect to take cognizance of recent discoveries, several inaccurate statements are made, which are calculated to lead to errors of serious importance. Thus, at page 278, (265 of the translation,) a table is given, which purports to show the mean quantity of urea excreted by a person in a state of health, during the twenty-four hours. This table is based upon observations of Becquerel, which were published in his *Séméiotique des Urines*, (p. 34,) over seventeen years since. The quantities stated are not one half those which are now obtained by improved processes, and yet no reference is made to any other results than those of Lecanu, which were published some time previously to Becquerel's.

At page 311, (295 of the translation,) the cells of the *torula cerevisiæ*, or, as MM. Becquerel and Rodier prefer to call them, "the globules of the sugar ferment," are stated some of them to be almost identical in appearance with the blood discs! No mention is made of the fungoid character of these bodies.

We might go on and point out many other inaccuracies and omissions, but we have no desire to multiply our citations. As we before observed, there is much in this work which is valuable. We may allude to the chapter on the blood, which is tolerably full and complete; but even here there are several instances of negligence, and but one method, that of MM. Becquerel and Rodier themselves, of analyzing this fluid is given.

In fact, the authors seem to have lost sight of most of the recent advances which have been made out of France in physiological and pathological chemistry. With that peculiar self-complacency in which Frenchmen are so wont to indulge, they appear to have imagined that those things not discovered in Gaul might have remained forever hid from mortal eye, and the world have been none the loser.

The translation of Dr. Speer is carefully, and even at times elegantly rendered. It is beautifully printed on fine white paper, in the style so usual with Churchill's publications that it has become commonplace to commend it. To those of our readers who are unacquainted with French, and who are desirous of possessing the *Chimie Pathologique*, we can confidently recommend this translation as being in every respect a faithful rendition of the original.

ART. VII.—*A Manual of the Detection of Poisons by Medico-Chemical Analysis.* By DR. FR. JUL. OTTO, Professor of Chemistry in Caroline College, Brunswick. Translated from the German, by WILLIAM ELDERHORST, M.D., Professor of Chemistry in the Rensselaer Polytechnic Institute, Troy, New York. 12mo. pp. 178. H. Baillière: New York, 1857.

THE Manual of Professor Otto is one pre-eminently adapted for the purposes for which it is intended, and will, doubtless, meet with a proper appreciation from those taking an interest in toxicological investigations. Though not designed as a complete treatise on the subject, it is, nevertheless, sufficiently full for all practical purposes. The rationale of many of the processes is given with some degree of minuteness, and all can be readily understood by any one having a slight acquaintance with the principles of chemistry.

Nearly half the book is taken up with the consideration of the means for the detection of arsenic. The circumstances which may lead to error in the employment of Marsh's test are well pointed out, and the method of Fresenius and Babo—undoubtedly the best we at present possess for the discovery of this poison—is given in detail.

The remaining portion of the work is devoted to the consideration of the methods for the detection of antimony, mercury, copper, lead, tin, zinc, hydrocyanic acid, oxalic acid, phosphorus, alcohol, chloroform, and the poisonous alkaloids, and concludes with a chapter on the examination of blood-stains.

The translator has performed his work in a creditable manner, and has, besides other additions, furnished the whole of the chapter on oxalic acid.

We repeat that the Manual is an excellent guide to toxicological researches. It fills a void in our medical literature which has long existed, and we wish for it an extended circulation.

ART. VIII.—*Introduction to Structural and Systematic Botany, and Vegetable Physiology: being a Fifth and Revised Edition of the Botanical Text-Book.* By ASA GRAY, M.D., Fisher Professor of Natural History in Harvard University. 8vo. pp. 555. Ivison and Phinney: New York, 1858.

As it does not come within our province to review at length, oftener than occasionally, works upon subjects that are only collateral to medicine, and having recently furnished our readers with such a review of some of Dr. Gray's contributions to botanical literature, we are reluctantly compelled to give the above book only a passing notice. Of the general character and scope of the work all who are interested in such matters are sufficiently informed, the present being the fifth edition of what was formerly entitled the Botanical Text-Book; and we would, therefore, simply say, that it has undergone such a revision as the advancing state of the science demands, and is undoubtedly the best work on the subject in the English or, according to Professor Agassiz, in any other language.

Of the mechanical execution of the book—the paper, printing, and illustrations, over thirteen hundred in number—we can speak in the same unqualified terms. It is one of the most finished specimens of the typographical art that we have ever examined, and the mere handling of the book and running the eye over its beautiful pages are productive of a species of pleasure that we have seldom before experienced.

Original Communications.

ART. I.—*On the Prominence of the Eyeball, and Sinking of the Caruncle and Semilunar fold following the ordinary operation for Strabismus. With an account of a pair of Scissors for performing the Sub-conjunctival Operation.* By ADDINELL HEWSON, M.D., one of the Surgeons of Wills Hospital, Philadelphia.

EIGHTEEN years have now elapsed since the operation of tenotomy was first successfully performed by Dieffenbach, of Berlin, for the cure of strabismus; and the thousands of cases which were subjected to this mode of cure, immediately on the announcement of his success, by surgeons of undoubted skill, as well as by the hosts of *squint-cutters* who sprung up like mushrooms everywhere, should have early determined, it might naturally be supposed, beyond all doubt, the real value of the operation. Yet this, it would seem, is really far from being the case; for although no one can deny that squint in any direction can be rectified by division of the muscles which give rise to the distortion, and that the operation is recommended by most surgeons, there are many of much experience and sound judgment, at the present day, who declare that, in a large majority of the cases subjected to it, the operation, especially when performed on only one eye, is far from being satisfactory in its results, as it is followed by a peculiar *vacant staring expression* by no means agreeable to a beholder. This effect has alone deterred many afflicted with obliquity from submitting to the operation, and influenced many surgeons in declining to resort to it.

This objection was raised against the operation early in its history, for Chevalier d'Ammon mentions it in a letter to Dieffenbach* as a constant result, even in the most satisfactory cases. And *Calder*, whose *brochure* on the operation was written in 1841, says he considers "this peculiar staring appearance, or seeming largeness of the eye after the operation, as one of its greatest drawbacks."† Then Duffin‡ has well remarked, that "the original obliquity of vision, it is true, may be removed" (by the operation;) "but if in its stead there be substituted a staring, vacant, projecting eye of apparently disproportionate size or a disagreeable leer, or if a mere alteration only in the nature of the obliquity be effected, it is very questionable how far the expression of the eye is bettered by the change."

A reviewer of Mackenzie's essay on the operation, writing in the Medical Gazette, in 1841,§ states, "that in a walk along the streets one may now recognize almost as many who have been *cut* as there were two years ago obviously squinting."

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* Arch. Général. for 1841. p. 260.

† Calder on Strabismus. London. 1841.

‡ London Medical Gazette for 1839–40. p. 941.

§ Vol. ii. p. 948.

This effect of the operation has also been admitted by Lawrence, Mackenzie, Walton, Nelaton, and most who have written anything of late on the subject. Mackenzie, especially, admits that "the eye which has had its adductor divided, presents a greater gap between the cornea and caruncle than natural: the caruncle is more sunk, the lids more open, the eye more prominent and convex at the nasal angle." "If both eyes," he further remarks, "have been operated on, both are rendered more prominent than natural; but being equally so, the circumstance attracts less notice. Where only one eye projects, and the projection is great, the physiognomy is very remarkably and disagreeably affected."* Then Mr. Critchett, who has written very recently on the subject,† is still more positive in the expression of his opinion, and all who are at all familiar with his valuable contributions to ophthalmic surgery, will receive his statements with the greatest confidence as to their accuracy. He says, "the first point that strikes every close observer, even in the most favorable specimens of the operation, where the eye has assumed a perfectly normal position and moves freely, is a certain sinking in and loss of the caruncle, so that the inner part of the globe seems more exposed than that of the opposite eye, and a fossa exists in the place of the caruncle; this, so far," he says, "as my experience goes, is an invariable result of the operation, and explains the circumstance that has often been remarked, that those cases are the most successful in which it has been necessary to operate on both eyes," etc. And for my own part, I must candidly confess, although a warm advocate of the operation, that I have yet to see a case which had been subjected to it—and I have sought diligently for such—in which I could not recognize the fact, often at a glance, and always by close inspection. Finally, such has been the effects of this operation, that a person of no less practical skill and judgment than Mr. Bransby B. Cooper, has "questioned the propriety of operating altogether."‡

It will thus be seen that it is very generally admitted that a disagreeable expression of the eye is a frequent, if not constant sequent of the operation as originally proposed for the cure of strabismus. This peculiar expression is due, as has already been intimated, to increased prominence of the eyeball, and depression or retraction of the semilunar fold and caruncle,—the latter, as Dr. Dix,§ of Boston, long ago observed, giving to the eye "the appearance of a globe lying in the orbit, but detached from it."

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* Mackenzie on the Eye, American edition, 1855, p. 381.

† Practical Remarks on Strabismus, published in the London Lancet for 1855, vol. i. p. 479.

‡ Proceedings of the Royal Medical and Chirurgical Society of London, reported in the Lancet for 1840, vol. i. p. 159.

§ American edition of Cooper's Dictionary: Article "Strabismus."

The fact once admitted that such effects follow the operation, it becomes a matter of great importance to determine their cause—or causes, if more than one,—and to determine whether they must necessarily follow the division of the rectus or not, and how they can be avoided.

The opinion early set forth by Herbert Mayo, in regard to the increased prominence, is the one advocated by Mr. Critchett and most other writers. It is, that it is due to the loss of the balance of power between the recti and obliqui muscles—the latter acting, as Mr. Critchett says,* with undue power when one of the recti is divided. If such is the case, the defect is an unavoidable consequence of the operation, and must invariably follow the division of one of the straight muscles, no matter how this division may be accomplished. Is, however, this opinion a mere hypothesis, or is it based on facts? It is said to be based on the *facts*, that the recti, when acting together, have the power to retract, and the two obliqui, by a similar unity of action, to protrude the eyeball. But are these *facts*? In the first place, does the eye, in its normal state, undergo either retraction or protrusion? It certainly does, to a very limited extent. This is shown every time the eyelids are opened or shut—as was pointed out by Sir C. Bell.† Then protrusion, or increased prominence of the ball, is apparent in the staring of amazement. And the retraction has been observed, it is said, during operations on the eye,—as that for cataract. Admitting, then, that such movements can take place in the ball, is it by the action of the straight and oblique muscles that they are produced?

The recti arise, in general terms, from the ligament of Zinn, at the apex of the orbit; and passing forward on either side, are said to embrace a large segment of the eyeball, on which they have their insertion, near the margin of the cornea. If there is nothing to interfere with their action, these muscles must, under such circumstances, have a tendency, whenever they contract, of compressing the eyeball, as well as causing it to retract in the orbit. One of these effects must as necessarily follow as the other, and the contents of the ball must, of a consequence, be disturbed in their relations by every movement given to the eye by these muscles. But it is well-known to every one that such effects do not attend the action of the recti muscles. They are prevented from exerting such influences on the eyeball by the *deep ocular fascia*, first demonstrated fifty years ago by Tenon, and more recently described by Farrell, Hélie, Richet, and others. This fascia, to which Mr. Farrell has given the name of the *tunica vaginalis oculi*,‡ is a fibrous tunic, of a yellowish white color, connected in front with the margin of the orbit, and extending inward and backward to the entrance of the optic nerve into the sclerotic, where it becomes continuous with the dense envelope of that nerve. It forms a covering to the adipose tissue in the bottom of the orbital cavity, and serves as a socket for the eye to roll in. It has six openings, through which the tendons of the muscles escape to reach the sclerotic coat. "These tendons are loosely connected to the edges of these apertures by fine cellular tissue,*" which forms an envelope for them, but in no way interferes with their motions through these openings. Farrell's mode of demonstrating this fascia does not give a correct idea of its relations to the ball, and especially of the position of these openings for the recti muscles. By splitting the lids in a vertical direction, stretching each of the flaps thus formed forcibly away from the eye, and fixing them firmly in these positions, the tissues beneath the conjunctiva are all very much distorted in their relations. By this stretching, the sub-conjunctival layer of the ocular fascia is found drawn away from the ball, when the conjunctiva is dissected off, and appears blended with the deeper layer, and the two seem like one dense membrane extending from the cartilages of the lids to the optic nerve behind the ball; and the openings, or places of exit of the recti muscles, seem at some distance from the ball. A horizontal or vertical section of an eye frozen in the orbit, with all its appendages in their natural position, gives a very different view of the relations of these structures.

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* Op. Cit.

† Nervous System of the Human Body, by Sir C. Bell: Edinburgh, 1836, p. 153.

‡ Dublin Journal, vol. xix. Old Series for 1841, p. 337.

FIG. 1.†

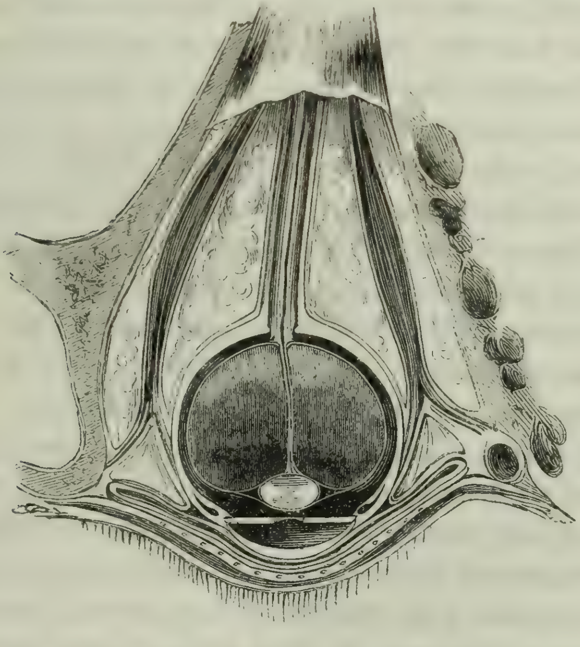

Figure 1, drawn by Mr. Daniels with great care and accuracy, from a

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* Farrell.

† Figure 1 represents a transverse section of the right eye, with all the reflections of the occular fascia, and its relations to the eyeball, muscles, and lids, faithfully delineated from a dissection made by the author, and still in his possession. The distance between the anterior or sub-conjunctival, and the posterior or deep ocular fascia, is somewhat greater in the drawing than is natural, in consequence of the traction made on these two layers to show the character of the dense cellular tissue which fills up the space between them.

horizontal section prepared in this way, shows the true relations of these orifices for the tendons of the recti. These orifices, if they may be so called, are here seen at the points where the ocular fascia divides into two leaflets, (tracing it from behind forward,) the one to pass outward—speaking of the eyeball as a centre—to the edge of the orbit, the other forward, over the anterior segment of the ball. Of the further reflections and attachments of this fascia we shall have to speak hereafter.

Each one of the recti, just before passing through the orifices in the fascia, divides, as Tenon pointed out, into two tendinous bands. The smaller of these two bands is directed toward the edge of the orbit, and passing behind the tunica vaginalis, or deep ocular fascia, becomes attached to the tissue covering the orbit, by a small flat tendon. The other passes through the tunica, and being directed inward, is inserted into the sclerotica. The smaller portion Tenon calls the *orbital* tendon, the other the *ocular*. Of all the orbital portions, that "of the internal rectus is relatively the largest."*

The influence of these *orbital tendons* can be readily perceived. Placed as they are behind the deep fascia, they are admirably arranged to prevent the recti from compressing the ball and causing it to recede in the orbit. These tendons, aided perhaps by the fascia, have the effect of making the action of the recti on the ball similar to what it would be if these muscles had their origin from the sides of the orbit, while they possess a rapidity and facility of motion greater than could in that case belong to them. These anatomical details certainly do not seem to me to favor the possession of a power by the recti of retracting the eyeball.

But vivisections have been resorted to for the purpose of determining this action of the recti, and Mr. B. B. Cooper's experiment is cited to prove the possession of this retracting power by these muscles. He succeeded in producing permanent retraction of the globe within the orbit in a rabbit, by dividing the two oblique muscles. But is it not verily begging the question, to say that the recti produce this retraction? The experiment proves nothing whatever in regard to the action of the recti muscles.

Then, palsy of these muscles, constituting a form of what is called Luscitas, uncomplicated by any other lesion, also proves that they have nothing to do with the protrusion or retraction of the eye, for in this disease (which is sometimes confounded with strabismus) we have no increased prominence as we should have if the recti, in their normal state, prevented protrusion of the ball.

But does not the deep-seated position of many squinting eyes furnish pathological evidence of the retracting power of the recti? By no means; for *true squint*, it is now well known, is due to a want of co-ordinating power, or consentaneous action of the two eyes, rather than to a rigidity or shortening of a rectus of one of them. In all cases of the disease, by closing the straight eye and then desiring the patient to look directly at you with the affected one, he will do so without any difficulty; the eye will move with the utmost promptness in obedience to his will, in every direction. This the patient certainly ought not to be able to do, if the deformity were owing to rigidity or shortening of one of the straight muscles, or paralysis of its antagonist.

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* Richet, Traité Pratique d'Anat. Med. Chirurg., p. 307.

Having adduced, as I believe, sufficient evidence that the recti have not the power to effect retraction of the eyeball or prevent its protrusion, we have next to inquire whether the united action of the oblique, when unopposed, can cause its protusion. The anatomical relations of these muscles do undoubtedly favor the idea that they can give rise to such an effect.

The superior oblique, or *obliquus major*, is placed at the upper and inner part of the orbit, and arises about a line from the optic foramen, at the upper and inner part. From thence this long slender muscle proceeds toward the internal angular process, and terminates in a round tendon, which passes through a fibro-cartilaginous ring or pulley, (trochlea,) formed in the edge of the deep ocular fascia, and "attached to a depression on the frontal bone at the inner margin of the orbit." Thus the tendon escapes at this point from behind the ocular fascia. It is then "reflected *outward* and *backward*, and passing between the globe and the superior rectus is inserted into the sclerotica, midway between the superior and external recti muscles, nearly equidistant from the cornea and the entrance of the optic,"* and consequently behind the vertical axis of the eye.

The inferior oblique arises from a minute depression on the orbital process of the superior maxillary bone, just within the inferior margin of the orbit, and close by the external border of the lachrymal groove."† It is surrounded at its origin by the deep fascia, so that it may be said to be entirely in front of that structure. "The muscle then inclines *outward* and *backward* between the inferior rectus and the floor of the orbit, and ends in a tendinous expansion, which passes between the external rectus and the globe to be inserted into the sclerotica at its external and posterior aspect.

As to the action of the muscle, the superior oblique may be regarded as arising from the trochlea, a point vertically opposite the origin of the inferior oblique. With such points of attachment, the combined action of the two must be to draw the ball forward and inward; or if the inward tendency be opposed by the external rectus, they must thrust the ball forward only, or forward and a little outward; but in all instances the movement *forward* will be decided. Their united action must, therefore, be capable of preventing retraction in an opposite direction. This capability was proved by Bransby B. Cooper's experiment, before alluded to, for in that experiment it will be remembered *retraction* occurred on the division of these two muscles.

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* Sharpey and Quain, p. 318, vol. i., American Edition.

† Ibid.

If it is admitted, then, that the oblique muscles can, by their united action, protrude the ball in a manner more or less forward, and that the recti have no power by united action to move it in an opposite direction, what means, it may be asked, are there of opposing this tendency of the oblique, and causing the eyeball to recede as much as the deep-seated structures of the orbit will allow?

To this question I would answer, that in the eyelids are to be found the chief resistance to this tendency of the oblique muscles, and the power of forcing the eye backward.

These structures, as is well known, consist, beneath the common tegumentary covering and connective tissue, of a *sphincter* muscle, attached most firmly at the inner angle,—two cartilages connected by dense fibrous tissue (part of the ocular fascia) to the orbit, and a reflection of the conjunctiva from the ball of the eye. The two lids differ, however, very much in size, and also in the extent and character of their motion. The upper is much the larger and deeper of the two. Its cartilage is semi-elliptical, and has a depth of six lines at the centre.* This lid descends, in the closing of the eye, below the lower border of the cornea,† and fairly embraces a large portion of the anterior segment of the ball. The inferior lid has a long, narrow, and nearly straight cartilage of about a uniform width of two lines.‡ Its position is horizontal rather than vertical, and it ascends and descends but little in the closing and opening of the eye. The points of juncture of the two lids, constituting the inner and outer angles, are not on the same plane, either vertically or horizontally,—the inner being a little above and in front of the outer. They are both much behind the anterior surface of the eyeball. The whole structure of the lids is more firmly attached at the nose than toward the temple.

The muscle of the lid consists of a broad stratum of elliptical fibres, deriving their origin chiefly from the tendo oculi at the inner angle. "The only points of fixed attachment (to bone) which its fibres possess, are at the inner margin of the orbit; they are free in the rest of their extent, except along the eyebrow, where they are blended with the occipito frontalis and corrugator supercilii.§

The fibres of the orbicularis, curving around the outer angle, have no direct connection with the edge of the orbit at this point; the cartilages, however, have, by a layer of dense fibrous tissue called the external angular ligaments.

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* Harrison.

† Sœmmering.

‡ Harrison.

§ Sharpey and Quain, p. 335.

All these circumstances seem to me to favor the idea that the lids play an important part in retaining the eyeball in position against the action of the oblique.

Any one, by closely watching the position of the outer commissure of the lids during the acts of shutting and opening the eye, may convince himself that this point (the outer commissure) glides inward, forward, and a little downward, and that the ball recedes somewhat as the eye is closed, and the reverse occurs as the eye is opened.

Then the protrusion of the ball which attends palsy of the orbicularis, as occurred in cases reported by Sir C. Bell,* proves negatively, at least, that the lids prevent protrusion. And a case recorded by Mr. Holthouse† proves the fact in the most positive and conclusive manner. The patient was one "suffering from paralysis of the third pair of nerves. The symptoms were ptosis, external strabismus, dilated pupil, and a total inability to move the eyeball from the position in which it was drawn by the external rectus. "Raising the upper lid gently with my thumb," he says, "I told the patient to close her eye, and in her efforts to do so the orbicularis visibly depressed the globe toward the bottom of the orbit, and at the same time moved the cornea somewhat inward, so that it was made to occupy a situation midway between the external and internal canthi of the eyelids."

And again, Mackenzie, in his work on "Diseases of the Eye," in alluding to a case of luscitas, states a fact singularly conclusive as to the views here advocated. He states that the luscitas had been preceded by exophthalmos and palsy of the side of the face, but that these symptoms had subsided. Here we have the protrusion subsiding with the disappearance of the paralysis of the orbicularis.

These views of the effect of the recti and orbicularis on the protrusion of the ball are not new. They have been urged before, and, among others, by Mr. Holthouse; yet this gentleman, after declaring that the recti have no power to produce retraction, but that this motion of the ball is caused by the orbicularis, appears to have forgotten what he had said, for he subsequently speaks of an antagonism between the obliqui and recti being destroyed, and retraction or protrusion occurring as the consequence of either set of muscles being weakened or strengthened; and remarks that "this has an important bearing on the operation for strabismus, for the division of one of the recti, by weakening the retractive force, relatively increases that of the opposing one; so that some degree of protrusion, under these circumstances, must always be looked for."‡ How well might Mr. Lucas retort on him for this, in his own words; for in speaking, in a subsequent part of his book, of Mr. Lucas's report of the results following the division of the oblique, he says:—"The report of these operations by Mr. Lucas not only bears out the views advanced in this paper, but is remarkable as showing the little faith which anatomists place in their own accounts of the action of these muscles. Thus, Mr. Lucas having informed us that the action of the inferior oblique is to direct the eye upward and inward, and that of the superior oblique downward and slightly outward, does not hesitate to divide the last-named muscle in order to rectify a convergent squint."

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* Op. Cit., Appendix. † Holthouse's Lectures on Strabismus, London, 1854, p. 8. ‡ Ibid. p. 11.

But, to return to the subject, it will be exceedingly difficult for any one, adopting the opinion that the recti have no power to retract the eyeball or prevent its protrusion, to understand why the simple division of the rectus internus should cause increased prominence or protrusion of the ball. Indeed, if the arguments I have adduced in regard to what I am disposed to believe are the chief retaining and protruding powers of the eye, have any truth in them, the simple division of one of the recti must not, necessarily, be followed by such protrusion; and yet I have stated and proved, on the testimony of the most reliable witnesses, that such an effect always follows the operation performed in the ordinary way. Yes; but in the operation are not other parts divided besides the muscle? and may not the division of these be the source of the deformity?

To determine this, let us first inquire what is the character of the wound made in the operations, which have been followed by this defect.

Dieffenbach, in his earliest operations, after making the conjuctiva tense by means of two hooks at the inner canthus, "proceeded to incise the conjunctiva in this part, (the internal canthus,) by the side of the globe, seperated it still deeper from the latter, and then divided the internal rectus thus exposed, with a pair of fine scissors, near to its insertion."*

Of the effect of this mode of operating, I have already given the testimony of Ammon, furnished in his letter to the great Berlin surgeon.

Then Mr. Lucas† (who was the first to publish on the subject in our language) uses a sharp hook to draw the eye out and fix it. This he inserts into the tunica conjunctiva, about two lines, or, two and a half lines distant from the cornea, and on a line corresponding to its transverse axis. He then gently draws forward the conjunctiva, and makes a semicircular incision of this membrane by means of the sharp-pointed scissors, from below upward upon the outer side of the hook, to an extent varying from four to six lines; and, he says, it may sometimes be desirable to make the incision longer.‡ Through this opening he passes a blunt hook from below upward between the tendon of the muscle and the sclerotic, and having thus brought the tendon into view, he divides it with the scissors as close to its insertion as is compatible with the safety of the sclerotic.

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* Dieffenbach's Letter to Dr. Lomas, Lond. Med. Gaz. for 1839–40, p. 109.

† A Practical Treatise on the Cure of Strabismus or Squint, by Operation. By P. Bennett Lucas, London, 1840.

‡ Ibid. p. 70.

This mode of operating, adopted by Mr. Lucas, although different in its details from that resorted to by Dieffenbach, is essentially the same, it may be said, as regards the direction and character of the incision in the parts covering the muscle, although, it is true, he divides the conjunctiva and subjacent parts nearer to the cornea. Of the effects following this operation we have the testimony, already quoted, of Mr. Duffin, who adopted the method.*

Following close on the publication of Dieffenbach's and Lucas's modes of operating, we find a host of different methods proposed by various individuals. Indeed, it is quite curious, as well as amusing, to see the warfare which was carried on in the journals, in the early history of the operation, as to who was the first to resort to one mode of operating or another; as to the relative value of hooks and elevators, scissors and knives, in the operation; as to who was the first to propose the use of the one or the other; as to who did the operation first in this place or that, etc. Still, amid all these trifling discussions, many useful hints reached the light, and the details of the operation were varied in many ways. With perhaps the exception of the methods proposed by Guerin, Amussat, and Boyer, they are all alike as regards the character and direction of the incision made to expose the tendon of the muscle, and the remarks made in reference to Dieffenbach's and Lucas's may be applied to them all. They all recommend a free division of the parts in a vertical direction, not only for the purpose, in all instances, of exposing the muscle, but often of freely dividing every band of tissue which it was supposed might be binding the eye down in its distorted position; and even of dividing the oblique—one or both—to rectify the deformity.

It must also be admitted that even the methods most in vogue at the present day resemble each other in the vertical direction of the incision. It is true that most surgeons now avoid any very extensive dissection of the globe, or unnecessary disturbance of the ocular fascia, being satisfied with the division of the superjacent tissues, near the insertion of the tendon. Yet, even when all this has been done, it is admitted that "protrusion of the globe, in some degree, occurs in nearly every instance."†

Having detailed just so much of the operation as is sufficient to show the character and extent of the division of the superjacent tissues resorted to, I have now to show how such a division of these parts can give rise to increased prominence of the eyeball and sinking of the semilunar fold and caruncle. But, as I have taken the ground that the tendency to protrusion in the normal state of the eye is opposed by the orbicularis, I have really now to prove that the division of the superjacent tissues of the ball disturbs the action or weakens the power of the orbicularis, and thus causes the protrusion of the eye; for I have denied that the division of the rectus has anything to do with this protrusion.

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* Lond. Med. Gaz. for 1840–41, p. 51.

† Walton, p. 269, Amer. Edit.

This, I believe, can be done by a careful consideration of the *close connection* of the superjacent tissues of the rectus with the *orbicularis*, and especially the connection of the ocular fascia with the latter muscle.

For this purpose I will consider the ocular fascia more in detail than I have yet done. I shall, of course, to do this, be compelled to go over much of the ground I have already been over, and although I may even trace it in the same direction as I have done, the repetition, I hope, will not prove irksome in connection with the new importance attached to its relations.

Tracing this ocular fascia, as Tenon* has done, from the optic nerve forward, we find it forming a complete cup for the ball, and sending off on each side a kind of *ligamentous wing*, as Tenon calls it, to attach the globe to the orbit. "These ligamentous wings are formed by the juxta-position (*l'adossement*) of the portions of this tunic, which pass, the one from the front and the other from the back of the globe."† The anterior leaflet of these "wings" corresponds to what is usually spoken of as the *sub-conjunctival fascia*, the posterior to the *deep-seated ocular fascia.* (See Fig. 1, p. 269.) These two (the sub-conjunctival and the deep-seated ocular fascia) are, however, but separate layers of a continuous structure; for the fascia, traced from the optic nerve, is found, when it reaches where the ocular tendon pierces it, to become much thicker, and divided into two leaflets,—the posterior, and much the stronger, passing off in front of the *orbital* tendons to the margin of the orbit, acquires a firm attachment to this border, and becomes continuous with the posterior margin of the tarsal cartilages for their whole length, and thus forms the ligaments (suspensary ligaments as they are called) of the lids. The other leaflet of the ocular fascia continues forward, and forms a covering to the anterior segment of the sclerotic as well as to the tendons of the straight muscles; and when this leaflet reaches to within about one-twelfth of an inch of the circumference of the cornea it is doubled on itself, and being reflected under the conjunctiva, it forms the sub-conjunctival fascia. (Fig. 2.) Some anatomists have described this layer of fascia as extending close up to the cornea, but I have never been able to detect it nearer than I have described, and I have the authority of Harrison and Jamain that it does not extend close to the cornea. Tracing this layer (the sub-conjunctival) from the ball to the inner angle, we find it passing somewhat obliquely backward, immediately under the conjuntiva, to meet the deeper layer. The two layers, although intimately connected by dense cellular tissue which fills up the space between them near the ball, become closely blended together in the neighborhood of the semilunar fold and caruncle, to which they have a firm attachment, as can be proved by traction on them. (See Fig 1, p. 269.) Then their united structures become blended with the layer of tissue covering the tensor tarsi, and with "that strong and very tense aponeurosis derived from the margins of the tendo oculi which extends over the lachrymal sac,"† and which is described by most anatomists as the posterior tendon of the orbicularis, from the firm support it affords the muscle through its true tendon. From this point we find the fascia connected with the tendon, and diffusing itself beneath the conjunctiva of both lids. This is all shown in Fig. 1, p. 269.

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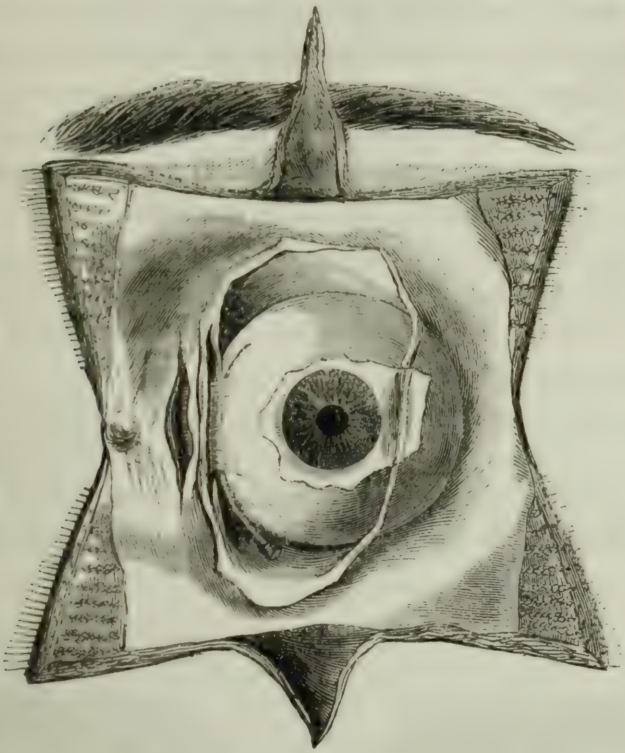
* Recherches sur Anat., Paris, 1806.

† Op. Cit. p. 201.

FIG. 2.*



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* An anterior view of the sub-conjunctival portion of the ocular fascia, showing its relations to various structures of the eye. The conjunctiva has all been removed except a small portion around the edge of the cornea, which, however, has been carefully dissected up to that edge. The fascia is left in situ on the outer segment of the ball, showing how close it extends to the edge of the cornea, and its manner of reflection from the ball to the margins of the orbit to be diffused over the surface of the lids beneath the conjunctiva. On the upper, lower, and inner segments it has been partly detached from the globe. The portion from the inner segment has been put upon the stretch in a vertical direction, and the ball located so as to bring into view the tendon of the internal rectus at its insertion, and to show the portion of the deeper layer interposed between the tendon and the sclerotic, forming the posterior border of the opening in this deep layer for the transmission of the ocular tendon of the muscle. The connection of the sub-conjunctival layer with the caruncle can readily be seen in this picture. An incision like that in the ordinary operation has been made through both layers of the fascia, to expose the belly of the muscle.

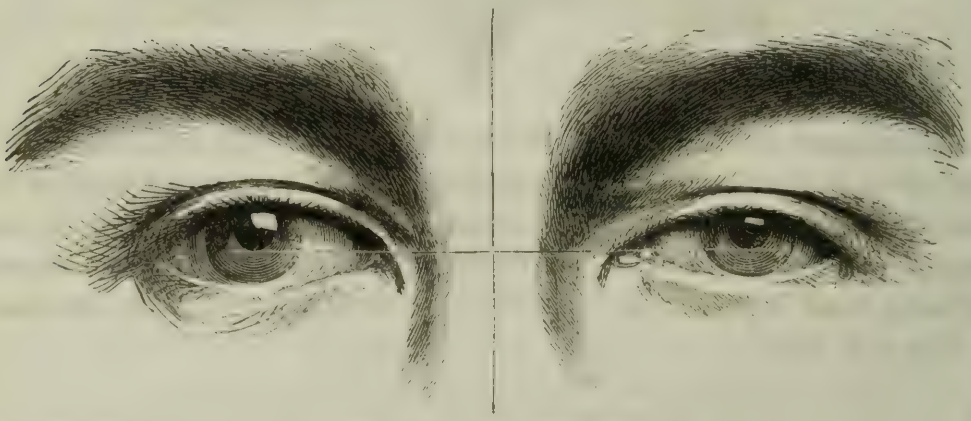
† Harrison.

On the outside, as well as above and below, these two layers of fascia pass in the same way from the ball, to meet and become blended near the edge of the orbit, and thence connect with the lids. In the lids, at the temporal angle, they form the external angular ligaments of Winslow.

It may be thus seen that this fascia is blended with more than one structure at the angles of the orbit; but that it is especially connected with the semilunar fold and caruncle any one can satisfy himself by making a dissection of the eye from behind, and removing all the adipose tissue and other intervening structures until nothing is left but the fascia, and then drawing it backward, he will readily perceive that he causes these parts to recede. Then, again, by dividing this fascia, with the conjunctiva, in a vertical direction, as in the ordinary operation for strabismus, I have found that I could by traction on both lids draw the outer end of the tendon some little forward, much more so than I was able to do before dividing these parts. I also found that my ability to draw this point forward was in direct ratio with the extent of the vertical division of the superjacent parts and the nearness of the incision to the caruncle.

Finally, a careful examination of an eye which has been operated on for strabismus in the ordinary way, will show that this very change has taken place in the position of the tendon. This may be seen in Fig. 3, copied from a photograph taken recently of a patient operated on by me some four years since. Only one eye, the right, was operated on, and the contrast in the position of the tendons of the two orbicularies is very remarkable. It might be supposed that this appearance of the position of this tendon of the eye operated on was due to the increased depth of the fossa at the inner angle; that the change of the position of the tendon was more apparent than real. Viewing the two tendons, however, from a position in which the fossa cannot have any effect on the impression produced of the situation of the tendons, or when the eyes are both closed, it will be recognized that there

FIG. 3.



is a real difference; that the outer end of the tendon of the right eye does really jut forward a little. But, admitting this change in the position of the tendon, is it not, it may be urged, due to the protrusion of the eyeball, which, putting the orbicularis on the stretch, drags the end of the tendon forward? Is the tendon, however, capable of being moved in this way by the orbicularis? If it was it should come forward every time the muscle is forcibly contracted; but that such does not occur any one can satisfy himself by placing his finger firmly on the tendon, and then forcibly closing the eye. He will then perceive that the tendon remains fixed in its original position, although the fibres of the muscle may be so puckered up as to overlap it. I have not been able to discover that this effect of the operation on the position of this tendon has ever been pointed out before; but since my attention has been called to it, during the past year, I have noticed it as an invariable result; and whenever I have attracted the attention of others to it they have expressed surprise that they had not observed it before, it was so patent.

This disturbance of the *tendo oculi*—the only fixed point of attachment of the *sphincter* muscle of the lids—must have an important influence on the action of that muscle; it must weaken its power to prevent protrusion of the ball, for the nearer this insertion of the muscle is brought to the plane of the anterior surface of the globe of the eye, the less must be its ability to press that globe back. The sinking of the caruncle may be in part only apparent from this position of the tendon. The internal angle of the lids coming forward might give the effect of this little body being more depressed than it really is. Still I am of opinion, from careful observation, that its position is somewhat affected by the operation. It seems to me to be flattened or stretched out, and by pulling on the inner end of either the upper or lower lid of an eye which has been operated on for squint, I have noticed that I could move this body more sensibly than in the natural eye. Of the real change of the position of the semilunar fold there can be no doubt. Both the caruncle and fold, I am satisfied, are disturbed by the division of the conjunctiva and ocular fascia. It was supposed that the disturbance of these parts (the semilunar fold and caruncle) were due only to the nearness of the incision to them. The incision was, therefore, made close to the cornea, and although much more satisfactory results were obtained by this, still the evils of the operation were not entirely prevented, they were only lessened. It is a well-known fact that Mr. Haynes Walton* has advocated operating in this way by a very small vertical incision directly over the insertion of the tendon of the rectus, and just extensive enough to reach and draw out the tendon with the blunt hook. This, however, he does not seem to have found sufficient, for more recently we learn of his closely stitching up the wound after the division of the muscle. Then Hélie,[*] Amussat, and Lucien Boyer[†] resorted to a horizontal cut in the conjunctiva and fascia, along the border of the muscle, to prevent the effects of the operation on the eyeball, semilunar fold, and caruncle; and for the same purpose Jules Guerin proposed his sub-conjunctival method.[‡] This sub-conjunctival division of the tendon of the rectus has been strongly advocated by Mr. Brooke in a paper read before the Royal Medical and Chirurgical Society of London,[§] and recently by Mr. Norman in a communication to the North London Medical Society, at its meeting, Dec. 14, 1856;[‖] and it has also met with warm support during some years from Mr. Critchett and his colleagues, at the Royal London Ophthalmic Hospital, Moorfields.[¶]

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* Op. Cit. p. 260.

From such testimony there can be but little, if any, hesitation in believing that the evil effects of the ordinary procedure of Dieffenbach and others are greatly diminished by the sub-conjunctival division of the muscle. And from the same sources for my evidence, as well as from personal observations, I am led to the conviction that the diminution of these effects is in an inverse ratio with the extent to which the fascia is disturbed.

Thus, *en resumé*, I have, at least, attempted to prove the following propositions in reference to the prominence of the eyeball—sinking of the semilunar fold and caruncle—following the ordinary operation for strabismus.

1. That these effects are not due to a disturbance of the balance of power between the recti and obliqui muscles, for the simple reason that no such balance of power exists between those muscles.
2. That the recti have no power to retract or prevent protrusion of the eyeball.
3. That the obliqui can protrude the ball.
4. That the action of the obliqui is opposed by the orbicularis.
5. That the power of the orbicularis to oppose the obliqui is weakened by the extensive vertical division of the conjunctiva and ocular fascia, which, especially the latter, play an important part in sustaining it in its action.
6. That in the ordinary operation these structures are so disturbed as to cause the evils spoken of.

As corollaries to the foregoing propositions I would urge—

a. That these evils are not an unavoidable consequence of the division of the rectus.

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[*] These sur l'Operation du Strabisme. Paris, 1841.

[†] Récherches sur l'Operation du Strabisme, 1842–44, 1 vol. 8vo., avec 12 planches.

[‡] Memoir sur la Myotomie Oculaire, par la Méthode sous Conjunctival; Gazette Medicale, 1842.

[§] Proceedings reported in the Lancet for 1846, vol. i. p. 159.

[‖] Lancet for 1857, vol. i. p. 67.

[¶] London Lancet for 1855, vol. i. p. 479.

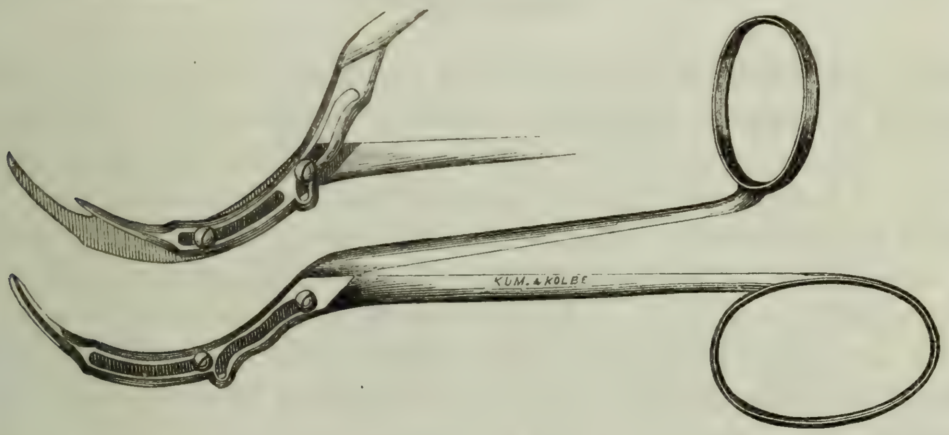
b. That they can be prevented by a sub-conjunctival division of the muscle.

It must, of course, be for others to determine whether I have been successful in sustaining the truthfulness of these propositions or not; but their admission or denial will not necessarily affect the character of the statements contained in the corollaries, for these statements may be in accordance with the truth, though they are not legitimately deduced or founded upon true premises. They may be sustained by observation and experience, the great touchstones, after all, in our science; for no matter how specious our arguments may be, or how plausible our deductions, if they are not sustained by these they are worth nothing. I have some such testimony to bring forward in support of these statements; but before offering it I will describe the means by which I have divided the tendon of the rectus without disturbing the fascia, and my manner of performing the operation.

For the sub-conjunctival operation I use a pair of scissors, which I devised some time since, and which were made by Mr. Kolbe, from a model I had furnished him. They are represented of full size in Fig. 5, and are peculiar in their appearance. They consist of a male and female blade, connected together by a compound sliding joint. These blades have a curve of a circle of three-fourths of an inch radius, and are sharpened on opposite sides for the distance of a little over half an inch from their points. The point of the male blade is blunt—that of the female quite sharp. The latter blade slides over the former on two flat-headed screws, which fit accurately in the grooves of this blade, and are capable of being tightened so as to prevent all irregularity of motion. The rings on the handles are arranged for convenience of using the instrument. When the handles are widely separated, as in Fig. 6, the point of the female blade is buried on the side of the male, and as they are closed this point of the female blade comes up in front of the cutting edge of the male, until there is a

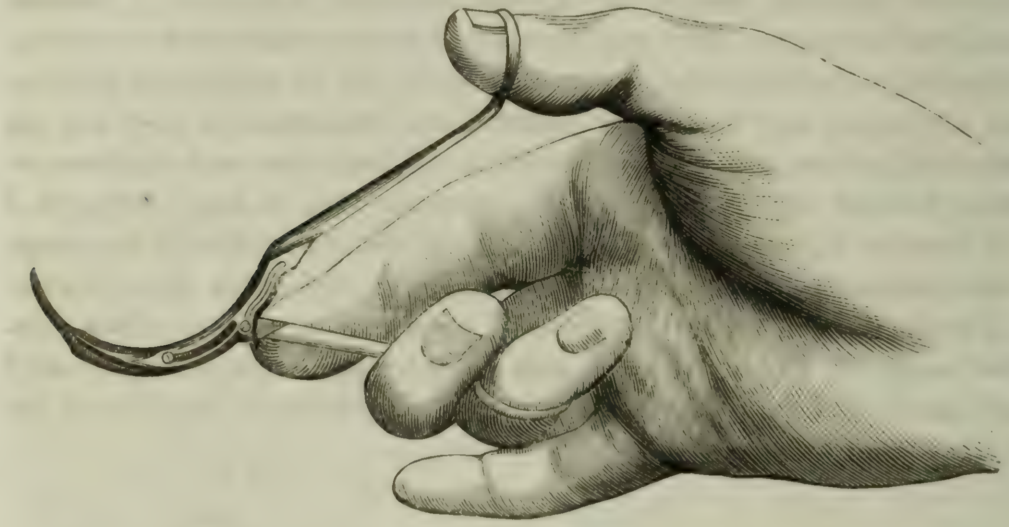
FIG. 4.

FIG. 5.



space of a line in width between the point and this edge, (see Fig. 4.) This point then ascends, preserving always the space of a line between its edge and the cutting edge of the male blade, until the two points are on a level. Then the female blade slides toward the male, and their edges cross, and the whole of the female blade is buried on the side of the male. The whole of this complicated movement is effected by simply pressing the handles together as in closing an ordinary pair of scissors. When well made, the scissors will always close with the utmost regularity and facility; but from the nature of the motion between their two blades, they cannot be readily opened while held by one hand, nor is this at all necessary, for they are to be taken in the hand ready for use, with the handles widely separated, so that the male blade can be used like a blunt hook, and passed beneath the tendon. This is to be accomplished through a small horizontal slit, made close to the inner and lower segment of the circumference of the cornea, and on a line with the lowest point of that structure. A cut of a quarter of an inch in the conjunctiva, in this position, has enabled me to pass the point of the scissors directly between the sclerotica and its cup-like envelope of the ocular fascia, and reach the tendon of the internal rectus without much disturbing the fascia. It will be remembered that this ocular envelope does not, according to Harrison and Jamain, extend close up to the circumference of the cornea, before it is reflected under the conjunctiva, to form the sub-conjunctival fascia; and my own experience leads me to the belief, as before stated, that it does not approach within a line, if it always reaches so near to the cornea. My purpose, therefore, in making the slit in the conjunctiva, as described above, is to get between the edge of the fascia and the cornea. It does not materially affect the results of the operation if this horizontal cut should

FIG. 6.



involve the edge of the fascia, as I have more than once made it do; but it is desirable, I think, to avoid any unnecessary cutting in the operation.

To make this incision I pinch up the conjunctiva, at the point indicated, with a toothed forceps, and divide it with a pair of sharp-pointed scissors. The opening made, I still retain my hold of the conjunctiva with the forceps, and introduce the male blade of the squint scissors through the slit, and insinuating this carefully between the sclerotica and the fascia, I pass its point back to a depth of nearly half an inch; then sweeping it up, and making it hug close to the ball, I slide the blade without difficulty beneath the muscle, and bring its point above the upper border. This done, and there is no difficulty in effecting it, I complete the operation by simply bringing the handles of the instrument together, taking care, as I do so, that the point of the female blade does not catch in the edge of the wound in the conjunctiva. Of this I find there is no danger, if the instrument is laid flat on the sclerotic. The two blades completely divide all the tendon embraced between them, and if I have taken care to carry the point of the male blade above the upper border of the tendon, and to draw the instrument toward me, so as to make the tendon tense before closing the handles, I find I can divide the whole of this insertion of the muscle by a single stroke of the scissors.

These scissors, in the estimation of all who have seen me use them in private and hospital practice, are thought to render the sub-conjunctival method a very simple and certain procedure. Against the operation, as thus performed, there cannot be urged the objections made to Guerin's, of its being either uncertain or hazardous.* The male blade can be passed as readily and as certainly as a blunt hook beneath the tendon, for it is nothing more nor less, as regards its point and curvature, than the blunt hook employed in the ordinary operation; and there is no danger, or even possibility, of this entering the eye. There is no risk of any very extensive division of tissues being caused by the scissors. They divide, at one time, only what is embraced in the space of a line broad by half an inch long; and if they are properly used—that is, laid flat to the sclerotica—and care is taken to get the point of the female blade beneath the fascia, they will divide nothing but the tendon. Of this I have again and again satisfied myself by experiment on the dead subject.

Then, again, with these scissors there is not the same difficulty or uncertainty in dividing the insertion of the muscle as there is in the plan proposed by Mr. Critchett, and which is already known to the readers of this journal, as the whole of his paper published in the Lancet, in 1855, was recently stolen by one of his countrymen, and published as an original article, in the North American Medico-Chirurgical Review for March, 1857.

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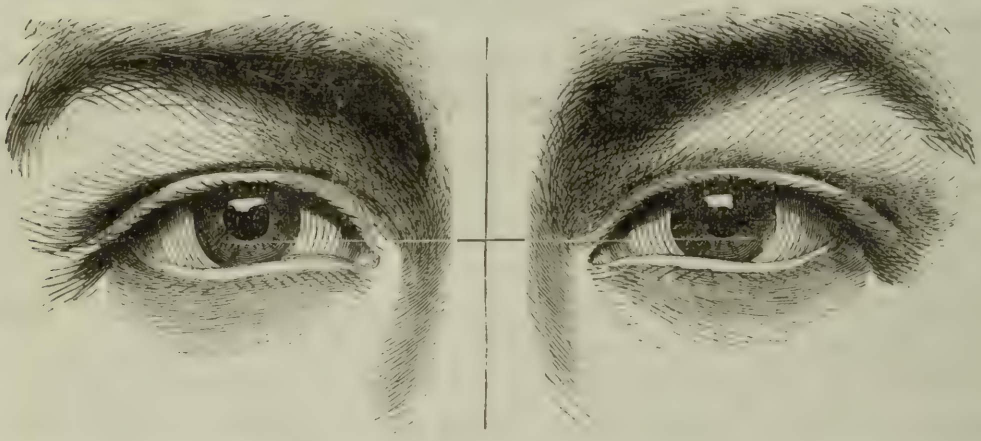
* Liston's Lectures, American Edition, 1846, p. 107.

Mr. Critchett's mode of operating, it will be remembered, consists in passing a blunt hook beneath the tendon through a small horizontal cut in the conjunctiva and fascia, at the lower border of the muscle. "The blades of the scissors must then be passed in through the opening, and, by a succession of small cuts, the tendon may be readily divided between the hook and the insertion into the sclerotic, and close to the latter." He remarks, however, that "some little difficulty in making a complete division is experienced, when the insertion of the tendon is rather broad, in reaching its upper edge; and, when that is the case, I make a small counter-opening," he says, "in the conjunctiva, corresponding to the upper border of the muscle, I introduce the hook from above, and, having passed it beneath the remaining slip of tendon, divide it with the scissors in the same direction."* The length of the blades, and their curve, in my scissors, are sufficient to avoid the necessity of resorting to any such expedient as that described above by Mr. Critchett, to completely divide the tendon when it has a broad insertion. And in this respect, at least, the operation with them possesses an advantage over that proposed by Mr. Critchett.

FIG. 7.



The success attending the use of these scissors has thus far been in strict confirmation of the views I have advanced as to the defects following the ordinary operation. It is now a year since they were devised, and I have in that time had the opportunities of employing them nine times; and in none of the cases in which I have employed them have I been able to detect any sinking of the semilunar fold or caruncle, or any increased fullness of the eye—and for these defects I have made diligent search. I have carefully noted the amount of separation of the lids, and the relations of the semilunar fold and caruncle, before and after the operations; so that, as far as they go, these cases furnish reliable testimony of the results. But

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* Lancet for 1855, vol. i. p. 507.

I have as yet had only a single case—such cases are rare—in which the division of one of the internal recti was found sufficient to relieve the squint. This was an outdoor patient of the Wills Hospital; and as no memoranda are taken at that institution of the addresses of such patients, I am not now able to obtain a photograph of her; and, in lieu of her picture, which would furnish such a very positive evidence of the success of the operation, I offer a picture of one of the other cases, (Fig. 7,) as from it, at least, some idea may be formed of the success I have met with. In this case, as well as in the others, the amount of separation of the eyelids, and the position of the semilunar fold and caruncle, were carefully noted before and after the operation, as the only positive means of determining, when both eyes are subjected to it, that no change has been produced in these respects by it. In all these respects the eye is the same as it was before the operation.

Those who are in the habit of following the advice of Lucas, Duffin, and others, to freely divide the fascia in the event of the division of the internal rectus not proving sufficient to immediately remove the deformity, may urge the necessity of dividing that structure as an argument against the method here recommended. But if the existence or persistence of squint is due in any degree to the contraction or binding down of the fascia, how could a patient straighten the eye and move it at will in all directions, as he can do on closing the apparently sound eye. The truth is that, in a very great majority of cases, the disease is one mutually affecting the internal recti of both eyes, although it *appears* to be confined to one only; and Mr. Elliott, of Carlisle, England,* long since laid it down as a rule to divide the second adductor in cases where "parallelism is not perfectly restored by division of the first." This rule has been endorsed by Mackenzie and others, who do not advocate or (as far as my knowledge goes) perform the sub-conjunctival operation; and I cannot better conclude this paper, which has already extended far beyond the limits it was originally intended to possess, than by quoting the remarks of the eminent physiologist, Dr. Carpenter, on this point. He says, "that he is well convinced, from repeated observations, that those surgeons are in the right who have maintained that, in a large majority of cases, strabismus is caused by an affection of *both* sets of muscles or nerves, and not of one only; and that it then requires, for its perfect cure, the division of the corresponding muscles on both sides. Cases will be frequently met with in which this is evident—the two eyes being employed to nearly the same extent, and the patient giving to both a slight inward direction, when desired to look straight forward. In general, however, one eye usually looks straight forward, while the other is greatly inverted; and the sight of the inverted eye is frequently affected to a considerable degree by disuse; so that, when the patient voluntarily rotates it into its proper axis, his vision with it is far from being distinct. Some surgeons," he further remarks, "have maintained that the inverted eye is usually the only one at fault, and consider that the division of the tendon of its internal rectus is sufficient for the cure. They would even divide its other tendons, if the parallelism be not restored, rather than touch the other eye. The author is himself satisfied, however, that the restriction of the abnormal state of the single eye is the exception, and not the rule, in all but very slight cases of strabismus; and to this opinion he is led both by the consideration of the mode in which strabismus first takes place, and by the results of the operation which have come under his notice. If the eyes of an infant affected with cerebral disease be watched, there will frequently be observed in them very irregular movements—the axes of the two being sometimes extremely convergent, and then very divergent. This irregularity is rarely or never seen to be confined to one eye. Now, in a large proportion of cases of strabismus, the malady is a consequence of some cerebral affection during infancy or childhood, which we can scarcely suppose to have affected one eye only. Again, in other instances, we find the strabismus to have resulted from the constant direction of the eyes to very near objects, as in short-sighted persons; and here, too, the cause manifestly affects both. Now it is easy to understand why one of the patient's eyes should *appear* to be in its natural position, while the other is greatly inverted. The cause of strabismus usually affects the two eyes somewhat unequally, so that one is much more inverted than the other. We will call the least inverted eye A, and the other B. In the ordinary acts of vision, the patient will make most use of the least inverted eye, A, because he can most readily look straight forward or outward with it; but, to bring it into the axis, or to rotate it outward, necessitates a still more decided inversion of B. This remains the position of things: the patient usually looking straight forward with A, which is the eye constantly employed for the purposes of vision, and frequently almost burying under the inner canthus the other eye, B, the vision in which is of very little use to him. When, therefore, the tendon of the internal rectus of B is divided, the relative position of the two is not entirely rectified. Sometimes it appears to be so for a time; but the strabismus then begins to return, and it can only be checked by division of the tendon of the other eye, A; after which the cure is generally complete and permanent."*

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* Edinburgh Medical and Surgical Journal, vol. lv. for 1841, p. 370.

NOTE.—Since the greater part of this article was written, I have learned from my friend, Dr. Emil Fischer, that Professor Graëfe, of Berlin, has expressed the same or similar views in regard to the action of the orbicularis and recti, in a recent article published by him in his Arch. of Ophthalmology, for October,

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* American edition of Carpenter's Principles of Human Physiology.

1857. Of this fact I cannot certify of my own knowledge, as I possess no acquaintance whatever of the German language. But, if such is the case, it will be no little gratification to me that the views I have attempted to develop should be advocated by so very eminent an authority as Professor Graëfe.

ART. II.—*On the Injection of Urea and other Substances into the Blood.* By WILLIAM A. HAMMOND, M.D., Assistant Surgeon U.S. Army. Read before the Biological Society of Philadelphia, January 18th, 1858.

THE principal object in view in undertaking the experiments detailed in this paper, was that of deciding upon the correctness of the theory advanced by Frerichs,* explanatory of uræmic intoxication. As is well known, this distinguished author regards the symptoms of blood poisoning, so frequently present in Bright's disease, as not directly depending upon the presence of urea in this fluid, but as being caused by its conversion, through the agency of a ferment, into carbonate of ammonia.

Frerichs performed two series of experiments, which he regards as tending to sustain his hypothesis. In the first series he injected a solution of urea into the blood of animals whose kidneys had been previously removed. In from 1¼ to 8 hours they became restless and vomited. Ammonia was detected in the expired air, and simultaneously convulsions ensued. Death occurred in from 2½ to 10 hours from the commencement of the experiment. Ammonia was found in the blood, the contents of the stomach, and in the bile and other secretions.

In the second series a solution of carbonate of ammonia was injected. Convulsions ensued almost immediately, and were quickly followed by stupor. The respiration was labored, and the expired air was loaded with ammonia. This substance, however, gradually disappeared, and the animals recovered their senses.

Frerichs offers no explanation of the nature of the ferment which he conceives to be necessary to produce uræmic poisoning, nor does he even attempt to demonstrate its existence, except indirectly, through the experiments above cited.

While admitting the facts set forth by these experiments, I am constrained to differ with Frerichs in his theory. Ammonia has often been met with as a constituent of the expired air of healthy individuals. I have myself frequently detected it in such cases; it has been demonstrated to be constantly present in the blood; and Frerichs's own experiments (those of the second series) show that it was not capable of causing death even when injected directly into the circulation, and when its presence in the blood was evidenced by its being exhaled in large quantity from the lungs.

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* Die Bright'sche Nierenkrankheit und deren Behandlung.

The fact that in the first series of investigations the kidneys were extirpated, while in the second the animals were unmutilated, while different substances were used in each, prevents our drawing any comparative conclusions from the results obtained.

The experiments to which the present paper relates consisted of two series. In the first the substance was injected into the blood of the sound animal; in the second the kidneys were previously extirpated. The two series were, as far as possible, alike in every other respect. The substances injected in both series were urea, urea and vesical mucus, carbonate of ammonia, nitrate of potash, and sulphate of soda.

FIRST SERIES.

1*st Experiment.* UREA.—Into the jugular vein of a large dog I carefully injected 60 grains of urea, dissolved in 4 ounces of distilled water.

No immediate effect was produced. After the lapse of 15 minutes the respiration became more hurried, and the animal began to show signs of uneasiness. At the end of 1½ hours slight spasms of the limbs ensued, and lasted about 10 minutes. These were followed by a disturbed sleep of two hours' duration. The dog then awoke, passed a large quantity of urine, and seemed perfectly well; no other abnormal symptoms occurred.

Ammonia was at no time detected on holding a rod, previously dipped in chlorohydric acid, in the current of the expired air.

The urine of this dog, for the twenty-four hours immediately preceding the commencement of the experiment, amounted to 932 cubic centimetres, and contained 287·39 grains of urea. For the twenty-four hours commencing with the experiment, the quantity of urine was 1268 cubic centimetres, and the urea 341·12 grains—a difference of 336 cubic centimetres of urine and 53·73 grains of urea in favor of the second day. The solid food on both days was the same; the amount of water drank was less on the second day than the first.

From this experiment it is perceived that, of the 60 grains of urea injected into the circulation, 53·73 grains were recovered from the urine, leaving a balance of but 6·27 grains unaccounted for; but which, however, was probably excreted with the urine under some other form.

2*d Experiment.* UREA AND VESICAL MUCUS.—60 grains of urea were dissolved in 4 ounces of distilled water, mixed with 115 grains of vesical mucus,* and carefully introduced into the jugular vein of a dog. The symptoms which followed were almost identical with those of the first experiment, except that the sleep was about 30 minutes longer. On awaking a large quantity of urine was passed. No ammonia was discovered in the breath. The animal recovered perfectly.

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* It is well known that to this latter substance is ascribed the power of converting urea into carbonate of ammonia out of the system. I was desirous of ascertaining how far its influence could be exerted in the blood within the system.

For the twenty-four hours previous to this experiment, the urine of this dog amounted to 823 cubic centimetres, and contained 194·21 grains of urea. For the second period of twenty-four hours the urine amounted to 1459 cubic centimetres, and the urea to 272·86 grains, being an increase of 636 cubic centimetres of urine and 78·65 grains of urea—18·65 grains more than were injected into the circulation. The solid food was the same on both days; the water somewhat more on the second than the first.

3*d Experiment.* CARBONATE OF AMMONIA.—60 grains of carbonate of ammonia, dissolved in 4 ounces of water, were injected into the jugular vein of a large dog. Symptoms of great uneasiness almost immediately followed. The animal staggered about the room, and after a few moments fell, and lay panting and moaning on the floor. At the end of two minutes copious fumes of chloride of ammonium were produced by holding a rod, on which were a few drops of chlorohydric acid, to the mouth. Convulsions ensued at the end of 5½ minutes from the commencement of the experiment, and continued 10 minutes. They then ceased, and did not recur. Ammonia continued to be evolved from the lungs for 1¾ hours. The dog remained in the recumbent posture for two hours. Three hours after the commencement of the experiment he evacuated a quantity of ammoniacal urine. He recovered perfectly.

During the twenty-four hours preceding this experiment, the dog eliminated 1327 cubic centimetres of urine, which contained 345·82 grains of urea. For the succeeding period the quantity of urine was 1654 cubic centimetres, and the amount of urea 296·53 grains, an increase of 227 cubic centimetres in the urine, and a diminution of 48·29 grains in the urea. The food was of the same character and quantity on both days; the amount of water drank was slightly greater on the second day.

The symptoms observed after the introduction of the carbonate of ammonia into the blood, it is seen, did not correspond altogether with those which followed in Frerichs's investigations. Thus, there was no vomiting nor stupor, and the convulsions were not of so violent a character. The quantity of carbonate of ammonia injected by Frerichs is not stated by him, and the difference in the effects may be due to a difference in the amount of this substance introduced into the circulation.

4*th Experiment.* NITRATE OF POTASH.—I injected 60 grains of nitrate of potash, dissolved in 4 ounces of water, into the circulation of a medium-sized dog. Convulsions of a violent character almost instantly ensued, and continued, with occasional intermissions, for 1¾ hours. There was also vomiting and severe retching. Stupor followed, and lasted till the death of the animal, which took place at the end of 5 hours and 25 minutes from the commencement of the experiment. No ammonia was detected in the breath.

5th Experiment. SULPHATE OF SODA. — Sixty grains of sulphate of soda, dissolved in four ounces of water, were injected into the jugular vein of a medium-sized dog. Convulsions quickly followed, and were very severe, lasting about two and a half hours, with short intermissions. The dog vomited twice. Stupor ensued upon the convulsions, and was present for about three hours. The dog gradually recovered his senses, but was disposed to remain quiet for the balance of the day. The next day he seemed entirely well.

The urine of the twenty-four hours preceding the experiment amounted to 1125 cubic centimetres, and the urea to 211·34 grains. For the twenty-four hours commencing with the experiment, the quantity of urine was 1283 cubic centimetres, and of urea 201·15 grains—an increase in the urine of 158 cubic centimetres, and a decrease in the urea of 6·19 grains.

SECOND SERIES.

In this series, as before remarked, the kidneys were removed previously to the introduction of the substances experimented with into the circulation. Extirpation of these organs is not necessarily attended with an immediately fatal result. A dog will live from one to four days after this operation, when it has been carefully performed.

1st Experiment. UREA.—I removed the kidneys from the dog used in the first experiment of the foregoing series. He bore the operation exceedingly well, and even appeared somewhat lively after it. Three hours subsequently I injected 60 grains of urea, dissolved in 4 ounces of water, into the jugular vein. Convulsions ensued at the end of 45 minutes, and continued with alternations of stupor for 6¼ hours, when the animal died. There was no vomiting. No ammonia was at any time detected in the breath.

The post-mortem examination showed a healthy condition of the stomach and bowels. No ammoniacal odor was perceived.

A portion of the fluid contents of the stomach were mixed with a little caustic baryta, in a test tube, and gently heated. On holding a glass rod moistened with chlorohydric acid, over the mouth of the tube, no fumes of chloride of ammonium were formed, showing, therefore, the absence of ammonia.

By employing caustic potash instead of baryta, and then applying the glass rod as before, copious fumes of the chloride of ammonium were produced. This arose from the conversion of the urea present into carbonate of ammonia through the action of the potash.

The presence of urea in the stomach was directly determined by evaporating a portion of the fluid contents to dryness, at a low heat, by means of the water-bath, treating the residue with alcohol, and again evaporating to dryness. By digesting the solid residue with warm water, filtering, and adding nitric acid to the filtrate, crystals of nitrate of urea were formed in considerable quantity.

The fact that no ammonia was discovered in the breath or contents of the stomach of this animal is in direct opposition to the results of Frerichs's experiments. I think it will be generally admitted that had any ammonia been present it would have been detected by the means employed, and conjoined to the fact that so unequivocal evidences of the existence of urea in the stomach were indicated, leave no doubt of the non-conversion in this instance, at least, of the urea into carbonate of ammonia.

The death in this case is, therefore, I think, fairly to be attributed to the direct action of the urea upon an organism brought into an abnormal condition by removal of the kidneys. In Bright's disease a similar condition of the system is present, and may exercise a like influence over the action of the urea which has accumulated in the blood.

2*d Experiment.* UREA AND VESICAL MUCUS.—Having previously extirpated the kidneys from the dog used in the corresponding experiment of the foregoing series, I injected into the circulation 60 grains of urea, dissolved in 4 ounces of water, to which 115 grains of vesical mucus had been added. The dog remained quiet for nearly an hour, when violent convulsions ensued, and continued with but slight intermissions for 5½ hours. Vomiting of bilious matters occurred twice. Stupor followed the convulsions, and remained till death, which took place at the end of 8 hours and 20 minutes from the commencement of the experiment.

No ammonia was detected in the expired air or vomited matters, nor was any discovered after death in the contents of the stomach. Urea was indicated in these latter by the method employed in the previous experiment.

The same remarks are applicable to this experiment as to the preceding, as the results are almost identical. In addition, it will be remarked that the mucus injected exercised no influence on the composition of the urea introduced into the circulation with it.

3*d Experiment.* CARBONATE OF AMMONIA.—After extirpating the kidneys, I injected into the jugular vein of the dog previously used in the corresponding experiment of the preceding series, 60 grains of carbonate of ammonia, dissolved in 4 ounces of water. Convulsions ensued in five minutes, and continued almost uninterruptedly for 3½ hours. Stupor followed, and remained present till the death of the animal, which took place 6 hours and 18 minutes from the commencement of the experiment. During the convulsions there was several times vomiting of chyme and mucus which gave off a strong ammoniacal odor.

Ammonia was detected in the breath in 2½ minutes after the injection into the blood. No post-mortem examination was made.

From this experiment it is seen that carbonate of ammonia is speedily fatal after being introduced into the circulation of an animal deprived of its kidneys.

4th Experiment. NITRATE OF POTASH.—Sixty grains of nitrate of potash were introduced, dissolved in 4 ounces of water, into the circulation of a medium-sized dog whose kidneys had been removed three hours before. Convulsions followed in 4½ minutes, and continued for 3½ hours, when the animal died. There was neither vomiting nor stupor, but undoubted evidence of the existence of ammonia in the breath was obtained. The post-mortem examination showed a compacted condition of the lungs and of the vessels of the stomach.

5th Experiment. SULPHATE OF SODA.—I removed the kidneys from the dog used before in the corresponding experiment, and 3 hours afterward injected 60 grains of sulphate of soda, dissolved in 4 ounces of water, into his circulation. Convulsions came on in 3 hours and 20 minutes, and lasted about 2 hours, when stupor supervened, and the animal quickly died. There was no vomiting. No post-mortem examination was made.

Judging from the foregoing experiments, I think that Frerichs's theory of uræmic intoxication is erroneous. In neither of the cases in which urea was injected into the circulation was any ammonia detected in the breath, vomited matters, or contents of the stomachs of the animals. Without pretending to question the accuracy of Frerichs's statement relative to the discovery of ammonia in his experiments where urea was injected, I am of the opinion that its presence was accidental, and that it is not to be regarded as an invariable attendant upon the retention of urea in the system.

Removal of the kidneys would seem to exercise a very important influence over the action of substances which, when introduced directly into the blood of sound animals, are not capable of causing death, or even of producing much constitutional disturbance. Thus, of ten animals experimented upon in the first series, but one (that in which nitrate of potash was injected) died, while all of the second series were attacked with convulsions, and sank after a few hours. It is seen, therefore, that carbonate of ammonia is not more poisonous than the other substances used, and not so much so as nitrate of potash.

The condition of system remaining after extirpation of the kidneys is, in many respects, analogous to that present during Bright's disease. In the latter condition the kidneys act imperfectly, and many substances which should be eliminated are retained in the organism. In the former there is, of course, no excretion of matter through these channels. In all cases, so far as I am aware, where the kidneys of animals have been extirpated and urea injected into the blood, death has supervened in a much shorter time than would have been the case had no urea been thus introduced into the system. I see, therefore, no great difficulty in ascribing the condition known as uræmic intoxication to the direct action of an excessive accumulation of urea in the system.

The fact that urea in large quantity has been found in the blood of persons suffering under Bright's disease, but in whom no symptoms of blood poisoniong were present, is no argument against the correctness of this view, for, doubtless, as with most other poisons, all persons are not alike sensitive to its action. Moreover, when the disease progresses slowly the rate of accumulation of urea is also slow, and thus the system, by becoming in a manner habituated to its presence, may be enabled to endure an excess without symptoms of intoxication necessarily attending.

I conclude, therefore, from the foregoing experiments—

1st. That urea, (simple and combined with vesical mucus,) carbonate of ammonia, and sulphate of potash, when injected into the blood-vessels of sound animals, do not cause death.

2d. That nitrate of potash, when thus introduced, is speedily fatal.

3d. That death ensues from the injection of any of the foregoing named substances into the circulation of animals whose kidneys have been previously extirpated.

4th. That in neither case does urea, when introduced directly into the circulation, undergo conversion into carbonate of ammonia.

ART. III.—*Epidemic Dysentery as it Occurred at Fort Gaines, Clay County, Georgia, during the Summer of* 1857; *with an Account of the Treatment Successfully Employed.* By WILLIAM J. JOHNSON, M.D.

DYSENTERY is a disease which can be traced back to the remotest period of antiquity. The writings of ancient medical authors contain accurate delineations of its symptoms, and elaborate histories and descriptions of its devastating ravages. In Sydenham's great work on *Acute and Chronic Diseases*, with notes by Dr. Rush, may be found an account of epidemic dysentery as it appeared in the city of London during the years 1669, 1670, 1671, and 1672. All the old writers on medical subjects regarded dysentery as a highly contagious disease, and hence, in their nosological arrangement, it was assigned a place among their "contagious pyrexia." The epidemic dysentery whose fearful ravages have been so severely realized, and whose "terrible rod" has scourged the people in portions of Southwestern Georgia and the adjacent counties of our neighboring sister State, Alabama, so painfully, and to a history of which I purpose occupying a few pages, was evidently, to a certain extent, contagious. "Facts are stubborn things;" and of this fact there cannot be entertained a reasonable doubt. The materies morbi generated by, and emanating from the bodies of sick patients, confined or closely crowded together in badly and imperfectly ventilated apartments, was capable—as the writer has had abundant means of verifying—of communicating the disease from one person to another until nearly entire families would become the subjects of its attack. So virulent was this poisonous agent in one of the families that I attended, and so malignantly fatal were the attacks, that I verily believe that nearly every member of the family would have fallen victims to the pestilence had this catastrophe not been averted by a timely separation of the diseased from the healthy.

Symptoms.—The attacks were usually ushered in by chills, or chilly sensations, or nervous rigor, with a general feeling of lassitude and *malaise.* This stage was followed by fever; the pulse was irritable, quick, and depressed; the thirst was intense; the heat about the head and over the abdomen was inordinate, with a coolness of the extremities. As soon as reaction came on—in many cases while it was being established—the patient would experience griping sensations in the bowels, accompanied by a bearing-down feeling, and a frequent inclination to void the fœces, which latter were chiefly mucus, sometimes mixed with blood, the natural contents of the intestines being retained, or passed in small compact scybalous masses. With these symptoms there was complete anorexia, and very frequently nausea and vomiting; the stomach immediately rejecting all substances, medicinal or otherwise, and thus the sufferings of the patient were greatly augmented, and the treatment correspondingly embarrassing to the physician. As the inflammation increased in intensity, the stools became more frequent and scanty, and in their passage over the phlogosed mucous membrane they occasioned a most intolerable pain, every evacuation being preceded or accompanied by severe griping, and sometimes by a rumbling or "growling" noise. The motions varied both in color and consistence, being sometimes composed of frothy mucus, mixed with blood; sometimes they were sanguinolent, pure blood being voided, and sometimes resembled the washings of fresh meat, and possessed a peculiarly offensive odor; sometimes muco-sanguinolent and totally inodorous. Occasionally lumps of coagulated mucus resembling bits of cheese were passed, and occasionally shreds or membraniform substances escaped during the act of defecation. In many instances neither fœces nor blood were evacuated, the dejections consisting merely of a white "slime or jelly," and entirely inodorous. When scybalæ were passed, the patient experienced temporary relief from the tormina and tenesmus and other distressing symptoms. The violent and ineffectual efforts to evacuate the bowels would occasionally, especially in cases of children, cause prolapsus ani, or protrusion of the coats of the gut beyond the verge of the anus, which would add greatly to the distress of the patient. I remarked, in nearly every instance, that the desire to evacuate the bowels was periodical, or, more properly speaking, paroxysmal; that one evacuation would beget the desire to have another, for a succession of five or six times, when the patient would lie quiet and comparatively easy for the space of one or more hours, when an irresistible inclination to go to stool would be experienced; and when placed upon it he would continue to strain for the space of a quarter or half an hour, or until he was forced by persuasions to assume a horizontal posture; nothing during the whole time being voided except a little bloody mucus and flatus. Usually there was great heat in the abdomen and about the head. The thirst was intense and almost unquenchable. Except during the period of remission the pulse was seldom below 100, generally ranging from 110 to 130 per minute. The tongue was generally loaded with a dark crust or tenacious fur, and sometimes fissured; and when the crust peeled off it left the tongue of a fiery red, smooth, and glossy appearance. The inner surfaces of the lips, dorsum of the tongue, and fauces were mostly dry and cracked, and the countenance, as in most abdominal affections, indicated excessive oppression of the nervous system, with general debility, and great oppression of the vital forces and energies. The fever which accompanied the disease was mostly remittent in its type, though it often assumed a synochal or continued form, merging, if the disease ran a persistent or protracted course, into a low grade of febrile phenomena, called, generally, *typhoid.* In a few cases typhoid symptoms supervened in the first instance, and accompanied the disease throughout, rendering its course very tedious and the convalesence protracted. I saw but few urgent cerebral symptoms among the numerous cases which came under my care. During the exacerbation of the fever, patients would occasionally exhibit delirium, manifested by low muttering and incoherent talking, especially when asleep; but as soon as they were aroused from their temporary slumbers they would appear rational. There was no coma nor stupor present; on the contrary, patients were sleepless and watchful, and very apprehensive and fearful of a fatal termination. The skin, except about the head and over the abdominal and thoracic viscera, was uniformly cool—not above, if equal to the ordinary temperature of the animal body. Perspiration was common, but unaccompanied with any mitigation of the complaint or any amelioration of the febrile symptoms; it did not appear to be a critical evacuation, nor was it accompanied or followed by a cessation of disquietude and jactitation; but it had no tendency to abate thirst or allay the restlessness of the patient. I have seen patients bedewed with copious perspiration while the mouth, tongue, and fauces were perfectly dry, and the teeth covered with thick sordes. With the exception of two cases which I treated, one an old and the other a middle-aged negro man, the pulse was uniformly quick, irritable, and weak. In these two cases the pulse was inordinately slow, indeed much below the usual standard of health, and yet in both the disease was not amenable to remedies, and ran a long, persistent, though favorable course; although at no stage of their illness did either of these cases present any threatening symptoms or evince much malignity.

I have thus given, in a hurried and disjointed manner, a brief outline of some of the prominent symptoms which marked the prevalence of the epidemic, but I feel that my task would be unfinished without a detail of the symptoms present in some of the fatal cases which occurred in the family of one of my former patrons, John Thompson, Esq., a worthy and gentlemanly planter, residing some six or seven miles east of this place. The symptoms in these cases differed materially from those above described, and resembled in many respects those of malignant cholera. Indeed, I think if they had occurred in a cholera district they would have been so regarded by the most competent medical judges, especially if they had been disconnected with cases of epidemic dysentery. In this family, where the subjects of the epidemic were confined almost exclusively to little negroes, and all of whom had previously been attacked with scarlatina, and labored under its usual sequelæ, such as dropsical effusion into the cellular tissue, etc., and by measles, the disease evinced a stubbornness, a malignity, and a fatality which I never before witnessed. The materies morbi, or infectious effluvia, emanating from the bodies of these patients became so virulent and concentrated as to generate disease approximating, as just stated, in its general symptoms and pathological appearances, closely to cholera. These patients were crowded together in a small apartment, and four of them died. Three of the fatal cases occurred in the same family—two brothers and a sister. The attack in each of these was ushered in by nausea and vomiting, and profuse rice-water evacuations from the bowels, intense thirst, great prostration of the vital energies, coolness of the trunk, and coldness of the extremities. The centrifugal force seemed to be entirely counteracted by the centripetal; the entire periphery or superficies of the body being cool. The pulse was very irritable, frequent, and so feeble as to render it almost imperceptible at the wrist. The features were pinched; the eyes sunken; the cheeks hollow; the mouth and fauces dry; the tongue cold. These patients were extremely restless, complaining constantly of great internal heat, throwing off the covering from their bodies, and crying incessantly for cold water. Nothing could restrain the profuse rice-water evacuations, which they continued to discharge until they died. Death was preceded in three of these cases by genuine cramps of the abdominal muscles. At the time these cases occurred there were in the same family several cases of unmistakable dysentery, which ran through the usual stages of the disease, and terminated favorably. With the exception of these four cases, the phenomena of which were veiled in obscurity, the writer saw no cases materially deviating from ordinary epidemic dysentery. I understand a number of these anomalous attacks took place in the practice of other physicians in the surrounding country, all of which, without a solitary exception, proved fatal. Dr. Bowen, of Lawrenceville, Alabama, some eighteen miles northwest from Fort Gaines, in whose neighborhood the visitations of epidemic dysentery were truly terrific, encountered, I understand, several of these abnormal cases not at all dissimilar to, but in every respect resembling those which occurred in the family of Mr. Thompson.

Pathology of Dysentery.—Dysentery is essentially an inflammatory disease. The difference between *sporadic* and *epidemic* dysentery is that, in the former the fever is merely symptomatic of inflammation of some portion of the intestinal tube, while in the latter a constitutional disease is engrafted upon the local one, being marked by symptoms of great prostration and general debility, rendering it a most fearful complication, and giving rise to the malignity of symptoms which characterize its progress. The disease under such circumstances becomes highly infectious, making it communicable from one person to another, especially when congregated together in small and filthy apartments.

Epidemic dysentery does not exist as a local affection *per se*, but to this local affection is superadded or conjoined a general disturbance of all the vital actions and functions of the body. The inflammation has its location or seat in the colon, hence most of our modern medical authors describe it under the name of colitis. Pathological anatomy has revealed this as the seat of the complaint, but the inflammation is not, however, invariably confined to the colon. The mucous coat of the latter may at first be the focus, but the inflammation radiates or spreads to contiguous parts of the intestines until considerable portions of it are involved in the general phlogosis. An opportunity was afforded me but once, during the prevalence of the late epidemic, to inspect the morbid appearances exhibited after death: and the patient whom I assisted to dissect and examine was one of the four who died with the anomalous symptoms heretofore described as approximating to those of malignant cholera. In this case the anatomical characters of cholera were strongly marked. I need not enumerate them, having already consumed too much time in the symptomatology of dysentery.

The general cause of the late epidemic was, in all probability, a peculiar constitution of the atmosphere, in some instances following, in others accompanied by the measles,—the latter generally, as is well known, a mild and not very dangerous disease when appropriately treated and uncomplicated with other affections, but when associated with dysentery often one of the most intractable and unmanageable complaints imaginable. The *exciting* causes of epidemic dysentery may be sudden changes of weather, cold and moisture, acid and unripe fruit, drastic cathartics, etc.; but, in order to give these potency of action, there must be some such predisposition as exists in persons whose vital powers have been previously depressed by fatigue, watching, anxiety, breathing an impure or infectious air, feeding upon an unnutritious or unwholesome diet, drinking bad water, nocturnal exposure, etc. In most of the cases which we witnessed here, during the prevalence of the epidemic, the cause could be distinctly traced to a peculiar state of the alimentary canal, left by a previous attack of measles. If it did not make its appearance immediately after the subsidence of measles, yet those persons who had suffered from an attack of the latter, even though some weeks had elapsed from the time of their recovery to the invasion of dysentery, were peculiarly liable to it, and endured it with less tolerance than those who contracted it without having been the subjects of the former.

As a matter *pro formâ*, I suppose I ought to say something in regard to the diagnosis and prognosis of dysentery; but, as I shall extend this paper to a much greater length than I originally intended, I must necessarily be brief on these two points.

Diagnosis.—It is almost impossible to confound epidemic dysentery with any other complaint. Its peculiar features and characteristics are so well marked and determined, that it is not likely to be mistaken for anything else, or *vice versâ.* Its true nature is known not only by the profession, but even the ignorant and uninformed portion of our population recognize it. The only malady which may possibly be mistaken for dysentery is hemorrhoids, on account of the tenesmus and the bloody mucous discharge; but the pain and soreness around the verge of the anus, and, above all, the presence of the hemorrhoidal tumors themselves, to say nothing of the absence of the constitutional symptoms, such as fever, etc., will remove all doubt whatever.

Prognosis.—This may be regarded as favorable when there is a general subsidence of all the severe and urgent symptoms; when the fever abates, and the pulse moderates in frequency; when the skin becomes equably warm and moist; when the inside of the mouth and fauces, and the tongue, cease to be dry; when the intensity of thirst diminishes; when the heat, soreness, and tenderness in the abdominal region begin to give way; when the tongue assumes a healthy appearance; when the appetite of the patient begins to return; and, above all, when the stools, after having been bloody and mucous, become bilious-feculent, and the tenesmus and tormina abate. On the contrary, if the abdomen becomes tumid or tympanitic; the skin moistened with a cold, colliquative perspiration; the eyes sunken in their sockets; the cheeks collapsed; the jaws fallen; prostration extreme; ejections involuntary; pulse rapid, quick, thready, weak, and almost imperceptible; low muttering delirium; incoherent speech; great confusion of the intellectual faculties, and subsultus tendinum, the prognosis is unfavorable.

Before I proceed to a short history of the course of the epidemic, it may not be inappropriate or out of place to furnish the readers of this article with a short topographical and historical sketch of Fort Gaines, the county seat of Clay County, Georgia. To the medical philosopher, and especially to the ætiologist, topographical descriptions of certain districts of country, and even of particular localities, form an inviting field of study. Materially differing but little from, I shall regard Fort Gaines as the representative type of the surrounding country. The Chattahoochee river taking its rise in the northern or mountainous parts of Georgia, and, running from north to south, until it disembogues itself into the Gulf, through Apalachicola Bay, forms the dividing line between this and the State of Alabama. At Fort Gaines the river forms a curve, at the angle of which rises a high pine bluff, composed of marl and other cretaceous substances. This bluff is one hundred and seventy-eight feet above low-water mark, and nearly perpendicular, and on its summit, opposite the convexity of the curve of the river, lies the village of Fort Gaines, containing a population of only four or five hundred inhabitants. The village is situated a little north of 31½° N. latitude, on the eastern bank of the river. Standing on the bluff, at the immense height of one hundred and seventy-eight feet above the water, and commanding a view of the river as it winds its course slowly along the base of the bluff, with a beautiful landscape intervening between the west bank of the stream and the adjoining hills in the distance, it presents to the spectator a most picturesque and romantic appearance. Spreading out in an easterly direction from the bluff is a level sandy plateau, half a mile in width, bounded by pine hills rising, according to the calculations of our former State Geologist, Dr. Cotting, to the height of one hundred and forty-eight feet above the level on which the village is located. The town still goes by the name by which it was called when a military post. The barracks were erected here in 1817, for the protection of the United States troops against the attacks of the hostile Indians, and originally stood on the bluff near the river. In the concavity of the curve on the opposite side of the river a swamp or lowland, about a mile in width, extends to the high hills on the west. This bottom was originally wet and marshy, and filled with lagoons, but is now in a high state of cultivation. On the Fort Gaines side there is no swamp, with the exception of a narrow belt of bottom land, lying above the village, and running parallel with the meanderings of the river. The bluff on the eastern side of the river is elevated perhaps more than one hundred feet above the west bank, which gives the spectator a commanding view, as he stands upon the summit, and overlooks the lowlands lying between the river and the high western hills by which they are limited. The face of the country, like most "long leaf pine" tracts, is level, except on the sides of brooks, creeks, etc., where it is not only undulating, but, in many places, steep and precipitous. Geologically considered, the soil near the surface is sandy, with clay intermixed, covering, in some places, a marl foundation abounding in cretaceous formations and other heterogenous products. At Fort Gaines there is no clay in the soil, hence it is not well adapted to cultivation. Manures are of no permanent benefit to the soil, which, on account of its porous, sandy character, suffers all fertilizing fluids to percolate it, producing, unless frequently reapplied, but little good effect. There is a substratum of impure carbonate of lime underlying the surface, at indefinite depths, which is not by any means uniform in its distribution Water passing through these calcareous beds becomes strongly impregnated with lime, and has, to those unaccustomed to its use, a very disagreeable taste. The original and characteristic forest tree of the plain on which the village stands, and which prevailed to the exclusion of almost every other wild growth, was the long-leafed pine. But few of these "natives" of the forest now exist, having long since been felled, and their places supplied by ornamental trees. A species of evergreen oak, closely allied in its habits to the live-oak, and called by us, in common parlance, *water oak*, has been transplanted to the yards and sidewalks, and affords in the heat of summer a cool and dense shade. But few sources of malaria exist; yet the prevailing epidemic diseases are those which are supposed to be produced by that subtle and inappreciable agent, such as intermittent and remittent fevers. The type of one or other of these fevers impresses itself upon nearly all of our inflammatory complaints. Hence, in pneumonia, pleurisy, dysentery, and all that class of ailments where the phlogistic diathesis is usually most fully developed, instead of synochal we generally have remittent, and sometimes intermittent fever, as an accompaniment. Our climate is variable, the transitions from heat to cold, and *vice versâ*, being sometimes exceedingly sudden. Our summers are very long, with a temperature generally ranging from 78° to 94° Fahr. in the shade. Our winters are temperate, mild, and pleasant, with the exception of occasional "cold spells," when north winds prevail. Their common temperature ranges from 48° to 62°. I must now return to a history of our late epidemic, and then close this paper with an account of the treatment employed.

History of the Epidemic.—The year 1857, up to this date, (November 2,) has been, in this section, at least, remarkable for a peculiar epidemic constitution of the atmosphere, which has prevailed, to a greater or less extent, since the month of January. During this time we have had four epidemic visitations in the following order of succession:—1st. Epidemic Scarlatina: limited, however, comparatively speaking, to a few neighborhoods. 2d. Epidemic Measles, which prevailed more or less extensively over a large extent of country. 3d. Epidemic Dysentery, which was general in its prevalence, and more or less fatal in its ravages. 4th. Epidemic Catarrhal Fever, which is now the prevailing disease. The first-mentioned, scarlatina, made its appearance in the month of January, and continued, with more or less violence, until the summer months. In the month of February, rubeola appeared, and continued through that month, March, April, May, and a portion of June. But little fatality accompanied these two epidemics, except in cases complicated with other diseases, or with local inflammation of vital organs. The most usual complications were bronchitis, pneumonia, dysentery, and diarrhœa. Whenever any of these inflammations supervened upon or accompanied the measles, the disease was formidable to manage. The meteorological changes of the weather have been the most extraordinary and fitful ever experienced. On the 18th and 19th of January, we experienced an intensity of cold never before felt in this latitude—the mercury descending to 6°, in the open air, and to 10° within doors. During that intensely cold spell I had sixteen scarlatina patients under treatment in one family.

The month of February was unusually warm for the season; the weather was so temperate that most of our old farmers predicted an uncommonly forward spring, and went rapidly to work, making preparations for planting; but the month of March was ushered in with cold winds and frosty weather, and continued cold throughout. The month of April was likewise cool, and even cold on some days. About the first of May the barometrical changes were very great, as well as the thermometrical. On the sixth day of that month we had a most terrific hailstorm, which literally ruined the crops throughout its entire range. On the 15th, another hailstorm devastated portions of the country. A great many hailstorms—indeed an unprecedentedly great number for the length of time—swept over the country, doing an incalculable amount of mischief to crops and other vegetation. Most of these hailstorms were accompanied with strong gusts of wind and rain, and pursued a course invariably from the northwest to the southeast. Our summer was a very short one. From May until the 20th of July we had a protracted drought. The rainy season then commenced, and continued until nearly the 1st of September, during which time we had showers nearly every day, and occasionally some heavy falls of rain. Early in the month of June the epidemic dysentery appeared, first in persons who had recently recovered from attacks of measles. In some places, the measles and dysentery prevailed together, in which case the dysentery was almost uncontrollable by remedies, and malignant in the extreme, decimating entire neighborhoods, and almost destroying whole families. In the neighborhood of Lawrenceville, Alabama, it was characterized by a most fearful and alarming fatality; scores upon scores of persons, including all ages, sexes, and colors, fell victims to its ruthless attacks. It has now nearly ceased as an epidemic, only a few scattering cases being occasionally met with. After a careful analysis of all the circumstances connected with this epidemic, I think the natural inference deducible from the premises is in favor of a peculiar condition of the atmosphere, as the cause of the visitation—a condition indicated by the unusual barometrical and thermometrical changes already alluded to, as well as by the presence of some subtle agent whose influence was widely exerted and disseminated throughout extensive tracts of country. What that peculiar poisonous agent was, I am unprepared to say; but there was evidently a connection between it and the meteorological causes which gave it such a wide diffusion.

Treatment.—The treatment of the disease, which, from experience, I found most successful, was the following—viz.: If called to the patient soon after the onset of the attack, a few grains of mercury with chalk and Dover's powder, were administered—say five grains of each, repeated at intervals of two or three hours, until two or three portions had been exhibited. If the stomach was very irritable, and would not tolerate the Dover's powder, the sulph. morphia, in proportional quantities, was substituted for it. At the expiration of a few hours this was followed with some of the neutral salts, most generally sulph. magnesia, dissolved in an infusion of capsicum or ginger. After two or three operations from the bowels had been procured by means of the salts, the following combination was administered, to adults in tablespoonful doses, and to children in teaspoonful doses, repeated every hour or two, according to the urgency of the symptoms and the frequency of the evacuations:—

℞.—Tinct. rad. rhataniæ,
“ camphoris, āā ℥ij;
“ capsici,
“ opii, āā ℥j;
craetæ preparatæ,
gum acaciæ,
sacch. albi, āā ℥ss;
aquæ, ℥viii.

A combination of castor oil and turpentine was a favorite remedy with some of our physicians, as a cathartic, in the initial stage of the disease; but from the experiments I made with it, I soon became satisfied that it was not superior, nor even equal to the epsom salts; its effects were too drastic.

Soon after the late Dr. James Johnson, of London, published his works on the *Diseases of the Liver and Tropical Climates*, our southern physicians ran wild on the subject of calomel. These works were regarded as the highest medical authority in the South, and the library of no southern physician was considered complete without a copy of them. They were consulted as oracles in theory and practice, and from the doctrines there inculcated calomel came to be considered as a *sine qua non* in the treatment of nearly all our southern febrile diseases, and was prescribed with but little discrimination. Hence a great many southern physicians still adhere to it, and the practice of treating epidemic dysentery with a combination of calomel and opium has been too generally adopted. But I trust the day is not far distant when calomel will be no longer employed in the treatment of this disease. In my judgment, it is not adapted to the cure of dysentery, and this opinion is predicated upon careful observation of its effects at the bedside of the sick. I do not mean to be understood as condemning the use of this drug in sporadic dysentery; on the contrary, I think under certain circumstances it is a valuable remedy, and one from which the best effects have frequently resulted; but I do most solemnly protest against its use in epidemic dysentery. An incalculable amount of mischief, I fear, has resulted from its injudicious and indiscriminate employment in the treatment of this disease. If admissible at all, it is only so in alterative doses—viz. in minute quantities. When otherwise given in this affection, I have often seen it produce nausea, vomiting, griping pains, and great faintness—symptoms which rapidly subside upon a discontinuance of the remedy. The only preparation of mercury which I think can be safely given in epidemic dysentery is the hydrargyrum cum creta, and I regard this as almost indispensable in the management of this affection. I have seen bad effects result even from the employment of blue mass, a fact which has created in my mind a distrust of the propriety of administering it in epidemic dysentery.

I have said this much in condemnation of the "calomel practice" for the purpose of warning my professional brethren against a too great reliance on its powers as a therapeutical agent in the treatment of epidemic dysentery; for I am persuaded that the remedy is too great an irritant of the mucous coat of the intestines.

When the stomach will tolerate the use of Dover's powder, I have seen the best effect accrue from a few grains of hydrargyrum cum creta, in combination with the former, repeated two or three times per diem, especially if the patient can be induced to take freely of warm diluent drinks. The secretions from the liver are by this means promoted; the pain and irritation of the intestinal canal abated; the functions of the perspiratory exhalants increased; and the restlessness and general disquietude relieved. Opium, or some of its preparations, I consider the best of all remedies in epidemic dysentery. It is the "Magnum Dei Donum," for without it we could not successfully control the pain, griping, frequent alvine evacuations, and general disquietude under which patients suffer. It has a most soothing and tranquillizing effect upon the nervous system, and when conjoined with the acetate of lead in doses of one-half to a grain of the former with 2½ grains of the latter, repeated at intervals of two or three hours, according to the urgency of the symptoms, it forms a most reliable dependence. It lessens the peristaltic action of the intestines, thus checking the discharges, and thereby giving rise to the impression, which prevails among some of our physicians at the South, that it is *de facto* a curative agent instead of being an adjuvant to other remedies.

As an external application in the treatment of dysentery, warm mush poultices, made stimulating by mixing mustard or finely powdered cayenne pepper in the mush, and applied as warm as the patient can bear them, form a most soothing and comfortable application. To procure gentle alvine evacuations from the bowels, which I think is highly necessary in the treatment, I know of no medicine of equal value with the sulphur and cream of tartar. It should be administered in cathartic doses, about every three or four days, and repeated until feculent discharges are procured. Many of our physicians prefer salines, such as the neutral salts; but I give sulphur and cream of tartar a decided preference.

Throughout the treatment of the late epidemic I also found quinine a most valuable remedy. Indeed, without its use we could not have controlled the accompanying fever. The latter was most commonly of the remittent type, the periods of abatement and exacerbation occurring every 24 hours. The abatement commonly took place early in the morning, and the exacerbation about 10 o'clock in the forenoon, the acme being usually from 2 to 4 o'clock in the afternoon, and the stage of declension from 9 o'clock at night until daylight the next morning. To cut short the paroxysm, which could not be entirely prevented by the administration of the quinine, or, at least, to mitigate the severity of the febrile symptoms, I most usually commenced the use of the remedy about 9 o'clock at night, and exhibited it until 9 o'clock the next morning, in doses ranging from 3 to 5 grains, repeated every two or three hours.

In most cases the functions of the stomach were entirely suspended, so that substances taken in the solid form would sometimes lie in that organ for several hours without undergoing scarcely any chemical change whatever. Under these circumstances, and with a knowledge of this fact, I seldom exhibited quinine in the pilular form. The formula which I generally used was the following :—

℞.—Quiniæ sulph. ʒi ;
acid. sulph. gtt. xxx ;
aquæ, ℥vi.

Of this solution I generally gave a large tablespoonful every two or three hours.

Dr. McHath, of Arkansas, in the October No. of the *Southern Medical and Surgical Journal*, invites the profession to a trial of creasote. In one or two hundred cases treated by him and his partner during the present year, he found that it was *the* remedy. He speaks of it in terms of unbounded commendation, and extols it as being almost a specific in epidemic dysentery. His formula is the following :—

℞.—Creasote, gtt. x ;
acid. acetic. gtt. xx ;
morphiæ sulph. grs. ii ;
aquæ, ℥i.

Of this a teaspoonful was administered every two or three hours. I regret very much that I had no opportunity, during the prevalence of the epidemic here, of testing the power of this article. Dr. Fowler, of this place, informs me, however, that he treated several cases of the disease with the creasote, and that in every case it acted "like a charm." Dr. Paullin also speaks favorably of it as a remedial agent. From the testimony of these three gentlemen, and others, who gave it a fair trial, I am disposed to think highly of it, and as such bespeak for it a fair, honest, and impartial trial by the profession.

In the treatment of the epidemic under consideration, our physicians encountered immense difficulties in consequence of the meddlesome interference of officious friends and acquaintances. There was scarcely a man or even an old woman in the community who did not possess some specific, some sovereign remedy for the cure of the disease, and who, in the kindness of their hearts, and with generous impulses seldom witnessed, would not only urge upon patients or their friends the necessity of "quitting the doctors," but of trying their simples. To enumerate all their remedies would be out of place here ; but the following may be mentioned as the principal—viz. white sumac, chinquepin-root tea, white-oak runner tea, sweet-gum bark tea, pine bark tea, red shank tea, post-oak bark tea.

A combination of camphor, paregoric, and number 6 was also much in vogue among the common people, and the following prescription was often vauntingly used, to the displacement of almost every other means:—

℞.—Camphor,
opium,
cayenne pepper, āā ʒi;
brandy, oij.
Dose a tablespoonful every 2 or 3 hours.

This preparation was used indiscriminately throughout every stage of the disease, and was the only one of their remedies which possessed any merit whatever.

Besides the means above mentioned, enemata of flaxseed tea, laudanum and starch, nitrate of silver, tincture of iodine, cold water, or even ice-water were found valuable adjuvants in the treatment of the epidemic. I found enemata of ipecac mixed with flaxseed tea or starch, to which laudanum was added, answered a better purpose. I have seen the happiest effects follow the use of this remedy, when thus administered, and can confidently recommend it to the profession as of the greatest value. It promptly relieves the tormina and tenesmus, allays irritation of the mucous coat of the intestines, and checks, sometimes for several consecutive hours, the evacuations from the bowels. When the fever was intense, accompanied by urgent thirst, great restlessness, and inordinate heat of the abdomen, enemata of cold water, and even ice-water, were followed by the most soothing and happy effects. In these cases I often substituted, for the warm mush-poultices, large towels dipped in ice-water and frequently applied over the abdominal region, often using at the same time injections of ice-water.

Throughout the treatment, opium, Dover's powder, or morphia entered into almost all of our prescriptions. The hydrargyrum cum creta was used when a mercurial seemed to be indicated. When the disease ran, as it often did, a protracted course, and the powers of the system began to flag, brandy, turpentine, ether, and other diffusible stimulants were found to be absolutely necessary. Dr. Stokes's assertion that in all inflammatory diseases there is a stage when stimulants act as antiphlogistics, is peculiarly true of inflammation of the intestines. Hence brandy is not only admissible, but indisspensably requisite, and was successfully used by us in quantities dependent upon the effects it produced. A number of our physicians placed great reliance upon the application of blisters. I cannot say that as a general rule I entertain a very exalted opinion of their efficacy. When all other means prove inadequate and unsuccessful, and their application is delayed until the "blistering stage" of the disease arrives, I have no doubt but that they often do good; but unfortunately they are frequently employed too early, and their application is often attended with injurious if not fatal effects. When resorted to they should not be allowed to remain on until full vesication is produced, as they often give rise to the most painful strangury. When they produce a tolerably powerful rubefacient impression they should be removed and a warm poultice applied over the surface.

ART. IV.—*A Case of Medullary Sarcoma of the Liver, with Abdominal Tumor, involving the Heart and Left Kidney.* By JOHN P. KLUGE, M.D., Physician to the Panama R. R. Company, and formerly Resident Physician at the Emigrant's Refuge Hospital, New York.

ADAM HELLER, aged twenty-seven, German, trade a blacksmith, was admitted into ward 18 of the Emigrant's Refuge Hospital, Ward's Island, New York, Nov. 26th, 1852.

History.—He states that he has never been seriously ill, with the exception of a periodical bloody discharge per urethram, ushered in with premonitory pains of a lancinating character in the renal regions. This sanguineous discharge or hematuria, he says, has occurred at regular intervals, varying from four to six weeks, and usually continued for three or four days, when it ceased altogether, and did not again appear until the time above mentioned had elapsed. Upon questioning him more closely, however, he informed me that two years ago he had suffered for several weeks from inflammation of the kidneys, as the physician in attendance had told him. This illness occurred prior to his coming to the United States.

Four weeks after his arrival in America he was admitted into this hospital, having, at the time, œdema of the feet, and complaining of a sharp pain in the region of the left kidney. He says that his periodical discharge has not appeared for the last three months, to which fact he ascribes his present indisposition.

Being rather anæmic and debilitated, a tonic course of treatment, consisting principally of a nutritious diet and the vegetable bitters, was adopted, and five weeks afterward he declared himself quite well, and was discharged, cured, by his own request. Now he returns again, after having been four months absent from this hospital, and after having been for five weeks previous a patient at the Quarantine Hospital on Staten Island, suffering, according to his statement, with the same complaint with which he was first admitted into the Emigrant's Hospital.

Present Condition.—Upon first viewing the patient after his second admission to the hospital, I anticipated a case of severe and long-continued intermittent fever. His countenance bore an anxious expression, and he was evidently suffering great pain. His complexion was sallow; pulse slow and very weak; tongue perfectly clean; appetite considerably impaired; cutaneous veins much congested, and of a dark blue color; feet œdematous.

Upon physical examination of the liver, it appeared indurated, extending to the processus eusiformis of the sternum, and half an inch below the line of the navel on the left side. Urine scanty, of a light straw color, and upon being allowed to settle deposited a whitish sediment.

Diagnosis.—Obscure; supposed the case to be either one of cirrhosis or carcinoma hepatis.

Prognosis.—Unfavorable; the engorged state of the abdominal cutaneous veins rendering it probable that some serious obstruction existed in the portal circulation.

Treatment.—He was again put upon a course of the bitter vegetable extracts, as on a former occasion, consisting of ext. taraxaci, nux vomica, etc. Patient, however, daily grew weaker; diarrhœa, with severe abdominal pains, set in about two weeks after his admission, and he became much reduced in flesh. Regarding the case as hopeless, and daily anticipating death to take place, I now treated only the prominent symptoms, as they presented themselves, by narcotics and anodynes, when, after a few days, a new phenomenon presented itself, in the discharge of about a pint of bloody urine; he rallied; his strength commenced to return; his urine gradually assumed a healthy character; and January 10th, 1853, he is able to sit up, and even walk about a little without assistance. He continued to improve for several weeks, when he was again attacked with diarrhœa and most of the other symptoms which presented themselves at the time of and shortly after his admission. He again recovered. This alternate recovery and relapse continued until spring, when for several months the patient steadily improved, without any unfavorable symptoms manifesting themselves, with the exception of occasional œdema of the legs and feet, occurring generally toward evening. This came and went, and was not, at the time, regarded as of much moment. He spent the whole spring and summer in the hospital, his general health being better during that time than could be expected, though it became daily more and more evident that he was laboring under a chronic disease of the liver and kidneys. Nothing of particular interest occurred until November, 1853, when the patient was again obliged to take to his bed; his feet and legs became more œdematous; the cutaneous or superficial veins of the chest and abdomen became tortuous in their course; in fact, a varicose condition of them took place, with astonishing congestion of even the most minute venous branches.

The liver, judging from the evidence afforded by the physical signs, extended as far upward as the sixth rib on the right side, compressing the lower lobe of the right lung. A severe catarrh soon set in, with troublesome diarrhœa, and the veins before referred to became engorged to a fearful degree.

The treatment adopted was merely palliative, anodynes and alkalies, which latter, in the form of Seidlitz powder, or soda bicarb., afforded him the greatest relief, so that he was continually asking for them—even when the state of his bowels was such as to render their administration unadvisable for a time. He at length became so much prostrated that, by the first of December, his pulse could scarcely be felt or counted at the wrist. He refused all nourishment, and complained of great pain in the pharynx whenever he attempted to swallow anything, even small portions of fluid matter. Now and then he could be persuaded to take a little stimulus in the form of wine-whey, or brandy-punch, or small quantities of beef-tea; and it was surprising that he should, nevertheless, continue to exist in this state for several weeks.

Death, at length, came to his relief, and terminated his sufferings on the 18th December, 1853, at 3 P.M. He died with symptoms of pulmonary œdema, which was discovered to have been the case upon making the autopsy.

Autopsy eighteen hours after death.—The liver was much enlarged, extending upward to the sixth rib, and compressing the inferior and middle lobes of the right lung; their color was normal, but the liver filled with circumscribed masses of medullary sarcoma, in consistence like brain substance. These masses varied in size from that of a hazelnut to that of a large walnut; and this viscus was, as it were, studded with these tumors on its surface. Closely attached to the posterior inferior portion of the liver was a large tumor, irregular in outline, hard, and covered with a serous membrane; superiorly, it was firmly attached to the base of the heart, (which was free from valvulary or other organic disease,) a little to the right of the origin of the aorta. In its posterior portion it was adherent to the spinal column, and the left kidney was entirely imbedded in it and incorporated with its substance. There was œdema of both lungs, and enlargement with softening of the spleen, which was about twice its normal size. A portion of the mesentery and pyloric extremity of the stomach adhered to the tumor. The stomach and intestines appeared to be quite healthy in other respects.

The intestines lay freely over the tumor, without any adhesions to it, and it was only detected upon raising the intestines and liver from their natural positions. A careful examination of this diseased mass demonstrated it to be, essentially, medullary sarcoma, disposed in lobes connected by areolar tissue. Its weight was six pounds, avoirdupois; circumference thirty inches, and longest diameter eight inches. The right kidney presented a normal appearance. Brain and spinal marrow not examined.

ART. V.—*Case of Compound Comminuted Fracture of the Humerus: excellent recovery.* By JOHN MECKLEY, M.D., of Reading, Pa.

THE unnecessary frequency with which amputation is resorted to after severe injury to the bones and soft parts of the extremities, more especially by country practitioners, who, rather than run the risk of a deformity for which they might be prosecuted in the courts, are oftentimes led to sacrifice a limb which, by careful dressing and close watching, might be preserved, induces me to present the following case as illustrative of what may be accomplished in this way, in the absence of many of the conveniences which city surgeons have at their command.

Dec. 17, 1854, J. C. O., aged twenty, a bridge carpenter, fell from a railroad bridge upon the ice below, a distance of thirty-three feet, striking, in his descent, several times upon the timbers of the bridge. He was taken up insensible, and it was observed that the arm bone was broken just above the elbow, the upper fragment protruding through the two shirts and two coats that he had on at the time. Three or four fragments of bone were also picked up, the largest measuring nearly two inches in length, three-fourths of an inch wide, and about one-third of an inch in thickness. I reached the patient about an hour after the accident; he had not fully re-acted, but was complaining a great deal of pain in his back and hips, and numbness of the injured arm. I found, on examination, that the humerus had suffered fracture just above the elbow-joint, but not involving the latter, and by pressing the parts between the thumb and forefinger it was ascertained that comminution had occurred to the extent of about an inch and a half. The wound of the soft parts was situated half an inch above the internal condyle, and upon introducing the extremity of my little finger I could readily detect the existence of loose fragments of bone. Hemorrhage was very slight.

After the administration of half a grain of sulph. morph., dissolved in a glass of wine, I applied the angular splint, made of felt cloth, after the method recommended by Professor Hamilton, of Buffalo; Dr. Erster, at whose house the patient was staying, assisting me in the dressing, and otherwise aiding me by his excellent advice. The patient not being able to lie down, in consequence of the other injuries which he had received, was placed in a large rocking-chair, the arm resting upon pillows, and supported by a small table placed conveniently near, and cloths wet with a mixture of one part of Goulard's extract, one part of whisky, and two parts of water, kept in contact with the limb at the seat of fracture. He was obliged to remain in the chair for six or eight days, and for the first day or two enjoyed but little rest.

On the third day I found considerable swelling, and on removing the dressings a good deal of oozing of bloody serum was observed. Upon reapplying the apparatus, I left an opening opposite the seat of fracture, and directed lint steeped in tinct. arnicæ to be placed upon the wound.

On the fifth day the patient's general health had considerably improved; he had slept well for two or three nights previously, but for the last twenty-four hours had suffered a good deal from a burning pain and sense of crawling in the wound. On removing the lint from the latter a number of large maggots were seen moving actively about, although the weather was very cold. The only way in which I could account for the presence of these animals was upon the supposition that they were developed from eggs deposited in the cotton used for padding the splints. The wound was cleansed by injecting tinct. arnicæ and water, and flax tow substituted for the cotton.

From this time the case continued to do well, and on the 4th of January, eighteen days after the accident, the wound in the soft parts having healed and the union of the bone progressing rapidly, I allowed the patient to be taken in a sleigh to his home, in Luzerne County, a distance of eighty miles. Three weeks afterward he was able to write me a letter with the hand of the fractured arm, and six weeks subsequently he called at my office. I then found that consolidation was complete, and the functions of the elbow-joint entirely restored, excepting inability to extend the forearm to a perfectly straight line.

Owing to the departure of the patient at the time mentioned, I had not an opportunity of employing passive motion during the treatment.

ART. VI.—*Puerperal Convulsions from Gastric Irritation.*

By J. LEVERGOOD, M.D., Wrightsville, Pa.

NOTWITHSTANDING gastric irritation is conceded to be a not infrequent cause of eclampsia, the subjoined history of a case of this sort, which occurred in my practice, may possibly present some features of sufficient practical importance to render it worthy of publication.

October 31st, 1853, I was requested, about five o'clock, P.M., to call to see Mrs. V., and knowing her to be near the end of her pregnancy, I visited her as speedily as possible, supposing she had been taken in labor. Upon my arrival I found her walking up and down the room complaining greatly of a pain in the pit of the stomach, but in other respects enjoying her usually good health. The seat of the pain from which she was suffering, its continuous and unintermitting character, in connection with the undilated condition of the os uteri, led me to conclude that she was not in the incipient stage of parturition. After repeatedly interrogating her, I at length ascertained that she had eaten a piece of *raw turnip;* but the portion she had swallowed was so very small as, in her opinion, not to deserve mentioning, in fact not exceeding, as she expressed it, *a bite.* Although an emetic seemed clearly indicated, I felt averse to administering it, apprehensive that by its powerful excito-motory action premature labor might be brought about, and partly, also, because the patient herself was strongly opposed, under the circumstances, to the use of such a remedy. I therefore ordered a large dose of castor oil, with forty drops of elixir of opium, with instructions to repeat the elixir in an hour, provided there was no mitigation of the pain. At eleven o'clock I was sent for in great haste, the messenger informing me that the patient had been suddenly attacked with convulsions. Finding her upon my arrival with a livid countenance, distorted features, frothing at the mouth, agitation of the body, and coma, I at once opened a vein in the arm, and abstracted a large amount of blood. An examination per vaginam also revealed the first stage of labor nearly completed, the vertex presenting. With the concurrence of Dr. Barton Evans, of whose valuable assistance I had the benefit, I determined to let the labor take its natural course, upon the ground that "a meddlesome midwifery is bad," and "that more women die when they are officiously delivered by force, than when they are committed to their own resources." The result verified the wisdom of the course we adopted, for shortly afterward, and synchronously with a powerful spasm, the uterus contracted and expelled a still-born male child. The convulsions continued for two days, and a slow recovery then took place, a most rigid antiphlogistic treatment having been employed.

That the piece of turnip was the exciting cause of the convulsions seems very evident from the fact that, in seven previous labors, and three subsequent to the above-mentioned attack, no untoward symptom occurred. That matters of an indigestible nature, taken into the stomach of a parturient female of a nervous temperament, will cause eclampsia, is an established fact in obstetric medicine, but the *cur et quere* have never been satisfactorily explained.

ART. VII.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, NOV. 25th, 1857.

The President in the chair.

Eburnation of Bone.—DR. PACKARD called the attention of the Society to a specimen of disease of the hip and knee-joints, obtained in the University dissecting room several years ago, from a male subject about fifty years of age; no history of the case could be procured.

The right acetabulum is seen to be enlarged, and the surface of the neighboring bony tissue roughened by adventitious deposit. The upper part of its edge is irregularly absorbed to some extent; at the upper and back part of the cavity the surface is roughened, and of a worm-eaten appearance, to the extent of 1¼ by 2 inches. Just at the edges of this patch the bone is eburnated, being very hard, white, and polished. The foveola is nearly filled with bony deposit.

The head of the femur has exactly the same characters as the acetabulum at precisely corresponding points, except at the part opposite the foveola, where it is unaltered. The *corona*, if it may be so called, and the entire cervix of the bone, are covered with a very thick and irregular adventitious deposit of bony matter. Both trochanters, the inter-trochanteric lines, and the linea aspera, are also thickened and roughened.

The left knee-joint seems healthy, except that on the articular face of the inner condyle of the femur is a patch 1¼ inch wide by 2⅜ inches long, which is very exquisitely polished, evidently by friction upon the corresponding surface of the tibia, where a similar patch is seen, differing only that it is 1½ inch wide by 1⅜ long. Around the articulating extremities of the femur, tibia, and fibula are irregular adventitious deposits of bony matter.

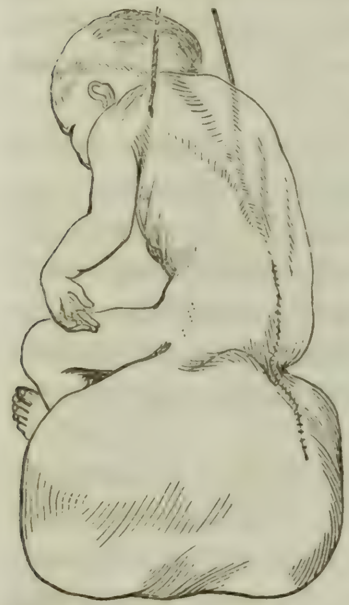
The other hip and knee-joints were diseased in the same way, but to a much less degree; they were not preserved.

This would seem to have been an instance of the affection described by R. W. Smith, in his work on *Fractures and Dislocations*, under the name of "Chronic Rheumatic Arthritis." Mr. Benjamin Bell calls it "Interstitial Absorption of the neck of the thigh-bone." Dr. Packard believed that it was rarely seen in the knee-joint so well characterized as in this specimen.

Cystic Tumors on the Nates, obstructing Delivery.—DR. KELLER exhibited two remarkable specimens of cysts taken from the nates of children, and which had presented a great obstacle to their delivery. The following histories of them were reported:—

CASE I.—Mrs. R., about twenty-five years old, had previously been delivered of two full-grown, healthy children. She was at the time in very good health, and the prospects for a third easy delivery were very favorable, the child being found with the vertex presenting. After a few pains the head was born, and the trunk of the child followed easily up to the hips; here it stopped; and when the attending physician tried to extract it in the usual way, he found an obstacle which he could not overcome even by exerting all his force. Having called in some experienced colleagues, the blunthook was used, by which the child was soon delivered, alive, but unfortunately with the left thigh broken by the application of this dangerous instrument. Owing to this accident, and to a deformity on the back, the physicians declared the child could not live. Three days after the delivery of the woman, (on the 6th of December, 1855,) I was called to see the child in consultation, the mother being sick and the child in a desperate state, as the fractured leg had begun to mortify. When I examined the child I found a tumor, (see Fig. 1,) of the size of a man's head, attached to the nates, exactly behind the orificium ani, and containing a liquid. On the right side, at the base of the tumor, could be felt, by a careful examination and strong pressure through the liquid, another hard tumor, in form and size like an egg. The child not being expected to survive, had not received any nourishment excepting a little tea and water. In order to settle the question whether the child could live or not, it was proposed, on the eighth day, to empty the sac by a puncture. More than a quart of a brownish liquid escaped, which became of a bloody color as it continued to flow. The child died a few hours afterwards, from a hemorrhage into the sac. A post-mortem examination was performed the next day. The viscera were all found in a perfectly healthy state, and did not communicate with the tumor. The sac was shrivelled into folds, and contained a large clot of blood. It was a perfect cyst, the parietes of which were very dense, covered in some parts, particularly at its insertion into the nates, with soft conglomerations of blood-vessels. The smaller, hard tumor above mentioned, which was felt inside of the sac, was formed by cysts, having dense but transparent membranes, and containing a clear liquid. At no point did the cyst communicate with the spinal column.

FIG. 1.



CASE II.—On the 21st of March, 1856, at 2 o'clock A.M., I was called to attend Mrs. T., in labor; I found the patient in a strange situation, as the child, having presented in a position of the vertex, had made its full exit, but could not be separated from the mother, being attached by a pedicle to a large body remaining in the womb, which was supposed to be another child. Before examining, I suspected a cystic tumor, and in this opinion was fully confirmed by a close examination. I immediately punctured the tumor with a curved trochar, and after the evacuation of about a gallon of a brownish liquid the sac was emptied, and the child naturally expelled. It died about six hours after its delivery by a capillary hemorrhage into the sac. The liquid unfortunately could not be examined chemically, as it was thrown away in spite of my strict injunction. The sac showed externally the natural appearance of the skin; the walls were about one-sixth of an inch thick. The internal surface was covered on the upper part with a soft tissue, which showed under the microscope a rich network of capillary blood-vessels, very similar to the villi of the intestines. The lower part was covered with a reticulated fibrous tissue. The tumor was inserted between the orifice of the rectum and the point of the coccyx, as in the first case; not exactly in the centre, but about two inches to the right side. A careful examination proved that the tumor did not communicate with the vertebral canal.

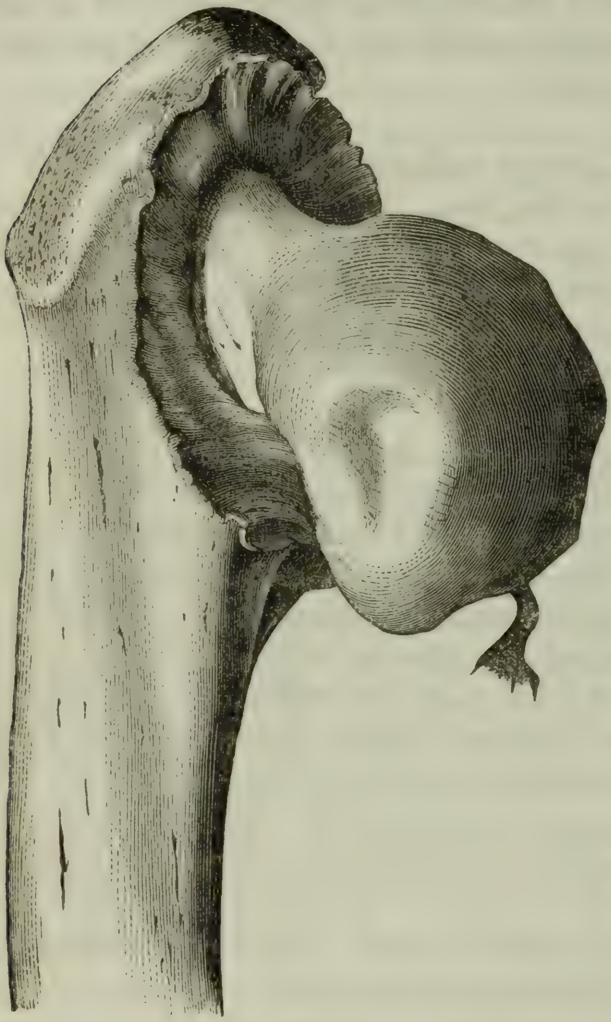
Fœtal Monstrosity.—DR. HEWSON exhibited the head and neck of a fœtal calf, presenting four eyes, two jaws. The skulls are blended; there are four lobes of cerebrum and cerebellum, each distinct; the medulla is single; the tongue bifid; the larynx and trachea single; the decussation of the optic nerves obvious; articulation of the jaws blended, but movable; sclerotic of the contiguous eyes blended.

Fracture of Cervical Vertebræ.—DR. MORTON exhibited several fractured cervical vertebræ taken from a young man twenty-three years of age, who fell down the hold of a vessel and struck with violence the back of his neck. He lived eleven days, then died of suffocation. The body was paralyzed from the arms down; the patient could lift his arms, but could not flex or extend the fingers. A marked symptom was retention of urine, which lasted until within two days of death, when the urine passed involuntarily from him. The heat of surface two hours after the accident was 102° Fahr. On post-mortem examination the transverse process of the fifth vertebra was found to be broken, and pressing on the spinal cord. The spinous process of the sixth was broken off; also a considerable portion of the bony bridges which connect the spinous with the oblique processes were fractured and pressed downward, but did not touch the cord. The bodies of the sixth and seventh vertebræ were crushed one into the other.

Laceration and Severance of the Cervix Uteri.—DR. KELLER presented a specimen of ruptured neck of the uterus. When the patient was examined by him, during labor, the lips of the uterus were much swelled and enlarged; the os tincæ admitted two fingers. The head presented; the womb was in a position of anterior obliquity. The head of the child pressed on the posterior wall and lip of the womb, which it finally ruptured. The child was still-born, after several hours' labor, and a tumor was then found protruding beyond the external parts. A ligature was applied around its base, and the tumor came away five days afterwards. It is now two months after the accident, and the patient is well. Indeed, at no time did she present any unfavorable symptoms. On examining the tumor carefully, it was found that it consisted of the healthy neck of the uterus, which had been severed and carried down by the child's head.

Deformity of the Neck of the Thigh-Bone, simulating Fracture with Ossific Union.—DR. RICHARDSON exhibited a specimen (see Fig. 2) of deformity of the neck and head of the femur, for the purpose of calling attention to the liability of mistaking such deformities for ossific union of fracture of the bone within the capsular ligament. The specimen was recently obtained from the body of a man, apparently about twenty-five or thirty years of age, and of good physical development, brought into the dissecting room of the Medical Department of Pennsylvania College; and upon first inspecting it Dr. Richardson supposed it possible that a fracture of the cervix, followed by bony union, might have taken place; but upon making an examination of the bone of the opposite side, a deformity of the same character, but much less in degree, was found there also.

FIG. 2.



The neck of the specimen shown is depressed so as to form with the shaft below an angle of 45°, much shortened, and increased in its antero-posterior diameter. The head is somewhat enlarged, spread out, and rendered irregular at its junction with the neck by the deposit of little nodules of new bone. The acetabulum is flattened out in correspondence with the increased size and flattening out of the head.

Dr. Richardson supposed the deformity to be the result of rickets, although upon examining the remainder of the skeleton he could find no want of symmetry in the bones except in those connected with the coxo-femoral articulations.

DR. MORTON then read, for DR. R. P. HARRIS, of Philadelphia, a paper on a case of Fallopian Pregnancy, terminating in death.

WEDNESDAY EVENING, December 9th, 1857.

The President in the chair.

Apoplexy of the Lung, with Disease of the Mitral Valve.—DR. DA COSTA exhibited a specimen of apoplexy of the lung, accompanying a narrowing of the mitral orifice. T. B., the patient from whom the specimen was obtained, a man thirty-five years of age, came under his care eight months ago, complaining of palpitation of the heart and occasional attacks of bronchitis. A year ago he had suffered from metallic poisoning, which brought in its train a fearful attack of colic, and left him subject to obstinate constipation. Previously, he had had secondary syphilis. At what time he first noticed the irregularity of the heart's beat, he could not remember; he complained of it while being treated for syphilis, but it is very probable that it had at times annoyed him before this period. When first seen, he looked sallow, was troubled occasionally with shortness of breath and palpitation, but was otherwise enjoying tolerably good health. A physical examination of his heart showed the dullness over the precordial region to be increased. The impulse was rather strong, and extremely irregular. A blowing sound was perceptible near the apex; none over the aortic or tricuspid cartilages. The great irregularity and rapidity of the beat rendered it impossible to ascertain whether the blowing sound was synchronous with the systole or diastole; it certainly did not occur with both. The pulse was small, frequent, and intermittent.

He continued in this state until within the last three weeks. His heart beat very irregularly; occasional difficulty in breathing, although this was by no means at any time a very severe or permanent symptom; occasional bronchitis; no dropsy. The sounds over the heart became more and more difficult to analyze, the blowing sound being by no means distinct; in fact, seeming to disappear altogether, while a peculiar clack took its place, or at any rate permitted it but rarely to be heard. This clack was best heard at the apex, faintly transmitted to other portions of the heart, yet sufficiently to obscure the normal sounds; it occurred with but one sound of the heart; with which, could not be determined.

Latterly, he had considerable cough, with frothy expectoration; dyspnœa at night; his face and feet had commenced to swell; diuretics had little influence over the watery effusion.

December 3d.—His symptoms grew much worse. His cough was very troublesome. Large and middling-sized moist râles were heard over his chest. He expectorated considerably. The sputum was not very thick.

During the night of December 6th he was seized with great difficulty of breathing, and pain in his chest. The pain was very severe and sharp on the right side, about the fourth rib. He expectorated a very small quantity of blood.

December 7th.—The pain had much lessened; there were no physical signs over its seat, except the moist râles, which were heard over the greater portion of the chest; the difficulty of breathing continued unabated to his death, December 8th.

Post-mortem examination.—The pleural membrane was perfectly healthy. The lungs were very vascular. In their upper lobes were several dense circumscribed spots, some of a dark, dull color, firm, and with signs of inflammation both in them and immediately around them. This was especially the case with the spot on the right side, corresponding to the seat of pain. Other spots, especially one on the left side, about an inch and a quarter in diameter, contained dark fluid blood, readily scraped away. The effusion seemed, to a great extent, to have taken place into the air-vesicles and minute bronchi.

The heart was enlarged; the cavities of the ventricles somewhat dilated; the walls increased, but not to a very marked extent, and more so on the left side than on the right; the auricle of the left side was considerably distended; its walls very slightly hypertrophied. The tricuspid and pulmonary valves were healthy; so were the aortic, save a trifling thickening, which, however, could not have impaired their function. The mitral valves were extremely diseased. They had been converted into a calcareo-osseous mass, which nearly closed the orifice, leaving an irregular and extremely narrow fissure for the blood to pass through, certainly not the twelfth of an inch in size.

DR. DA COSTA then spoke of the almost entire absence of external hemorrhage in this case.

DR. MOREHOUSE inquired whether the absence of hæmoptysis was not the rule in pulmonary apoplexy? He had seen several cases of pulmonary apoplexy with but trifling, if any, external hemorrhage. In one case, there was diffuse hemorrhage into the cellular tissue of the lung; in another, the effusion of blood into the lung was more circumscribed, and had taken place into the cells alone. Dr. Morehouse also directed attention to the evident signs of inflammation which two of the apoplectic lobules on the table exhibited, and suggested that these might have been the seat of an earlier apoplexy; those in which the blood was dark, and still half-fluid, being of later occurrence.

DR. DA COSTA stated, in reply, that he did not believe that pulmonary apoplexy was either of necessity produced, or connected with, external pulmonary hemorrhage. Indeed, he thought that even where this occurred, the quantity of blood expectorated was usually small. He was able to add another marked case to those mentioned by Dr. Morehouse. The patient, a laboring man, having an enlargement of the heart, was suddenly seized, after violent exertion, with palpitation of the heart, and great distress of breathing, caused, as was afterward ascertained, by nodular apoplexy of the lung. The sputum was merely very slightly tinged with blood. With regard to the signs of inflammation in the specimen before him, he remembered no means of ascertaining, as far as the symptoms went, if the hemorrhage into the lung had occurred at different times. He conceived the inflammation to have been produced by the blood acting as a foreign body.

DR. KEATING thought it a rare occurrence to have hemorrhage from the lung from mere congestion produced by disease of the heart. He mentioned several cases of supposed cardiac hæmoptysis, in which the lungs were found filled with tubercles, which had been the true cause of the hemorrhage, and inclined to the belief that these cases were more frequent than it was supposed.

DR. MOREHOUSE, and several other members of the Society, cited cases of hæmoptysis entirely unconnected with pulmonary disease, and evidently dependent upon the obstructed state of the circulation produced by cardiac disease.

Urinary Calculus.—DR. FORBES exhibited a specimen of urinary calculus, taken after death from the bladder of a man aged seventy. It weighs 726 grains. The bladder was sacciform, and much thickened; the calculus was of the mulberry variety, and of a dark color. The rectum presented a fistula in ano; the rest of the organs seemed healthy.

DR. MITCHELL remarked, with reference to the deep dark color of the calculus, that the oxalate of lime, when present in the urine, or in forming calculi, irritates and produces a bloody effusion which frequently tinges the stone, and causes it to contain much iron. Dr. Mitchell had found iron in a large number of urinary calculi—and indeed a little iron is always present in healthy urine, which would be increased if blood were effused. He had examined stones with regard to other metals, especially copper, which he had found in biliary, but not in urinary calculi.

Cancerous Stricture of the Ileo-cæcal Valve.—DR. KELLER exhibited a cancerous stricture of the ileo-cæcal valve, removed from a man who had long been subject to obstinate constipation. The stools were clay-colored; only about one passage in ten days. This, with a gradual falling off in health, and latterly with severe pain in the right iliac fossa, and vomiting, were the prominent symptoms. The liver, on post-mortem examination, was found to be healthy; so were the other abdominal viscera. The fæces in the upper bowels were of a green color. The ileo-cæcal valve was converted into a hard cancerous stricture, which presented elements like those of cancer under the microscope. The muscular coat of the intestines was greatly hypertrophied.

Dr. La Roche inquired whether the patient had suffered from jaundice.

Dr. Keller stated that he had not. He believed the liver to have been performing its functions properly, and its ducts to have been pervious. The fæces must have lost their greenish color in descending the small, to reach the large intestine.

Apoplexy of the Brain, consequent upon the use of the Trephine for the Removal of a depressed portion of Bone.—Dr. Gross exhibited portions of brain and dura mater, removed from the body of a man aged thirty-three. The following was the history of the case:—

G. W. Mason, aged thirty-three, became a patient at the Clinic of the Jefferson Medical College, in November, 1857, on account of a depression of the skull, caused, when he was a boy eight years old, by a blow from a circus pole. The depression was situated on the left side of the head, over the upper portion of the parietal and frontal bones, and was nearly two inches in diameter, by upward of half an inch in depth at its centre. Upon recovering from the immediate effects of the injury, Mason's health remained good until the age of twenty-two, when he was seized with epileptic convulsions, which continued to recur with more or less frequency and severity up to the time of his death. Within the last few months they had assumed so aggravated a character as to disqualify him, in great measure, from following his occupation, which was that of a clerk, his memory having become much impaired, his articulation defective, and his general health much disordered. Under the judicious advice of Dr. Oliver, his family physician, he had made use of a mild alterative course of treatment and a regulated diet, but with no improvement whatever in his condition.

On Wednesday, Dec. 2d, Dr. Gross removed, in presence of the medical class, two discs of bone at the site of the depression, the patient being under the influence of chloroform. The affected bone was remarkably thin, as well as very hard; and when the crown of the trephine had nearly cut its way through, it suddenly caved in, followed by a copious escape of serous fluid. One of the pieces had a long, narrow exostosis upon its inner surface, exhibiting some resemblance to the temporal bone of the fœtus. Corresponding to this projection was a slit-like opening, with well-defined edges, in the dura mater, large enough to admit the point of the index finger. After all the depressed bone was removed, it was ascertained that the dura mater had long been detached for some distance around, its surface having acquired a whitish polished aspect, and formed, along with the inner surface of the bone, a sort of reservoir for the lodgment of the serum which escaped so freely during the operation.

For the first forty-eight hours he appeared to be doing extremely well, although during the first night he had a slight convulsion. At the end of this period he became somewhat stupid, and answered foolishly, but was always able to protrude his tongue. On Saturday he had symptoms of drowsiness, which increased on the following day, when he had also a pretty severe convulsion. He now became soporose, and, although he could be roused, it was impossible to keep him awake longer than a few seconds at a time; he was still able to swallow. On Monday morning, December 7th, he was breathing stertorously, and was evidently in an apoplectic condition. Death occurred at eight o'clock A.M., nearly five days after the operation.

This case, which, so far as Dr. Gross is aware, is unique in its character, is of great interest in a physiological point of view, as showing the importance of the cerebro-spinal liquid in maintaining the functions of the brain, and, especially, the balance of the circulation. Had the membranes of the brain been free from any abnormal opening, permitting the escape of this fluid, it is difficult to conceive how so great an effusion of blood could have taken place after such an operation, as was found in the substance of the brain and its ventricles. Inflammation had certainly nothing to do with the fatal result, since there was no evidence of its existence, either during life or after death.

Thus it will be perceived that the immediate cause of death was apoplexy, occasioned by the removal of the pressure from the brain in consequence of the escape of the cephalo-spinal fluid, destroying the balance of the circulation, and rupturing the cerebral vessels just below the former site of the depression in the skull, where, as was previously stated, the cerebral substance had undergone chronic softening. How long the softening had existed must be a matter of conjecture; but the period must have been considerable, as is proved by the fact that there were old organized apoplectic depôts at the seat of the disease. The last and fatal attack of apoplexy probably began on the third day after the operation, and gradually proceeded, until it rendered the patient completely insensible nearly twenty-four hours before death.

An examination of the body was made twenty-nine hours after death, with the assistance of Drs. Gibbons, Asch, and S. W. Gross. The edges of the wound had partially united. There was no blood or pus between the scalp and dura mater, except a small quantity of semi-organized blood on the membrane, which caused it to adhere pretty firmly to the scalp. The opening in the dura mater, which was opposite the exostosis on the second disc of bone, was well defined, and large enough to receive the end of the index finger. The opening extended also through the arachnoid and pia mater, which accounted for the escape of the cephalo-spinal fluid after the operation, as well as at the time of its performance. On the surface of the brain, below the site of the operation, there was a patch of lymph in the sub-arachnoid areolar tissue. The pia mater was exceedingly vascular. The inflammation of the arachnoid was in itself insufficient to have produced any serious consequences. There were old apoplectic depôts in the furrows of the hemisphere, just below the site of the depressed bone. Upon making a horizontal section of the left lateral lobe, an enormous effusion of black blood was found a short distance below the surface of the brain. This was partly fluid, but for the most part coagulated, and had, as its boundaries, softened cerebral substance, looking very much like spoiled lymph and pus. The cerebral substance in its neighborhood was, in some parts, soft; in others, hardened. The extravasation extended into the middle lobe, in which was also found an old apoplectic depôt, or a semi-organized clot, of a roundish shape and as large as a marble. The left lateral ventricle was filled with blood, a large solid mass extending into its posterior horn, as well as into the third ventricle.

DR. LA ROCHE did not feel satisfied that the apoplectic clot and softening were recent. The latter especially, he thought, must have existed prior to the operation. He inquired of Dr. Gross whether any symptoms of compression, or of paralysis, had been observed at any time before the operation.

DR. GROSS.—None.

Tubercle of Lung simulating Cancer.—DR. MORTON exhibited a specimen of tubercle of the lung, having the exact appearance of cancerous deposits. The lung was filled with hard, roundish masses of various size. When cut into, these did not show any fibrous arrangement, nor were they as hard at the centre as at the periphery.

DR. DA COSTA mentioned that, at the request of Dr. Morton, he had examined these little tumors with the microscope; and although, from their appearance to the naked eye, he had expected to find in them the elements met with in fibroid or in cancerous tumors, yet such was at no portion the case. The round masses exhibited: lung structure much obscured by granules, and on a delicate basement, between the fibrous walls of the air-vesicles, granules, and non-nucleated cells, irregular in shape, small, but in close contact. The cells floating under the field of the microscope were epithelial cells, somewhat shrivelled, a few filled with small oil-drops; and irregular corpuscles, such as are usually designated as tubercle corpuscles.

DR. LEVICK stated that it was his opinion that the masses were tubercular. Several of them were softened in the centre. Dr. Levick spoke of the value of minute examination in similar cases. May not some of the reported cases of cancer of the lung and tubercle in other parts of the body be like this? Dr. Levick then commented on the rarity of primary cancer of the lung.

Enlarged Vermiform Appendix.—DR. MORTON next exhibited an enlarged vermiform appendix, nine inches in length, and filled with fæcal matter. It had not, during life, given rise to any symptoms.

WEDNESDAY EVENING, Dec. 23d, 1857.

The President in the chair.

Cancer of Several Organs.—DR. MORTON directed the attention of the Society to the cancerous viscera on the table. The history of the case is as follows:—

"Margaret Brown, aged thirty-five, a native of Ireland, was admitted into the Pennsylvania Hospital, November 25th, 1857, on account of a very painful tumor on the surface of the abdomen, at the base of the sternum; it had quite a carbuncular appearance. She stated that the tumor first showed itself about four months before her admittance, and that it came as a small, hard, round nodule, which gradually increased in size; it had a very hard base, and was softer toward the middle. She has always had a great deal of pain in it, more of late, and most during the night. She said her bowels had always been costive. She was nursing an infant, five months old, when she came into the hospital, but her milk failed her about two weeks before her death; her health had been very good until within a short time, and she had never any pains in other parts of her body. She was put upon a tonic treatment; and the tumor, which seemed as if it contained pus, was poulticed, and opened and discharged a thin watery matter. On the morning of the 20th of December she complained of a soreness in her neck; marked symptoms of tetanus set in, which terminated fatally at five P.M. the next day.

Post-mortem examination fourteen hours after death.—The tumor on the abdomen extended only through the parietes, and was attached to the cartilages of the ribs and sternum; when cut into, it presented a cancerous appearance. The lungs and heart were healthy. The kidneys were full of cancer-spots all over the surface; one cancerous mass was found in the cellular tissue, near the pelvis of the left kidney; a large cancerous tumor was found occupying the right side of the pelvis, over the sacro-iliac junction, as large as two fists; through it the iliac vessels and nerves passed, entirely surrounded by the tumor. A small mass was found in the left axilla, which had the same characteristics as the other tumors. Other organs healthy. Portions of each tumor were examined under the microscope, and exhibited cancer-cells.

Dr. Darrach suggested that the lesion of nerves which were involved in the tumor near the ileum might have been the cause of the tetanus.

Hairy Mole on the Cornea of an Ox.—**Dr. Darrach** exhibited a hairy mole on the cornea of an ox. The ox, during life, had not its sight affected by the mole, and could close the lids without difficulty. The surrounding cornea was healthy.

The mole was situated on the upper and outer portion of the cornea; was attached to the conjunctiva by a band of conjunctival tissue; it had a broad base, and was covered with hairs from six to eight lines in length. The mole at the base was about five and a half lines, and about five in height.

Dr. Hewson stated that a patient at Wills Hospital had been lately under his care who had a wart on the inner border of the cornea similar to the one exhibited. It was not, however, covered with hair.

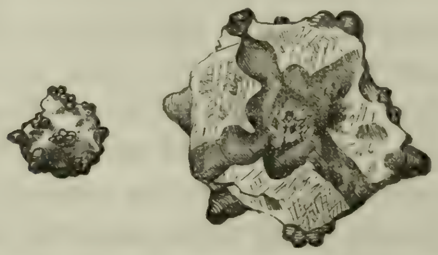
Large Gall-stones; some impacted in Hepatic Ducts.—**Dr. Packard** exhibited a gall-stone, oval, concentric, with rings of darker and lighter brown; 1 inch and $\frac{9}{16}$ in length, $\frac{15}{16}$ in width, (measuring the section;) it had completely distended the gall-bladder. The liver was natural in appearance, but in the left lobe the hepatic ducts were found distended to the size of the portal vein by gall-stones of various sizes, all soft and brown.

No other visceral disease existed. The patient was a sailor, who had fallen overboard from a vessel, fracturing his right thigh, and remaining in the water about an hour; the accident occurred about four days previous to his death, and no reaction took place in the interval.

Dr. Hall exhibited the four extremities of a woman who died of idiopathic gangrene, while he was resident in the Episcopal Hospital. The case was, at the time, fully reported in the March number of the *Medical Examiner*, 1856.

Vesical Calculus.—**Dr. Mitchell** exhibited a mace-shaped calculus. This curious stone (Fig. 3.) was removed post-mortem, by Dr. Pancoast,

Fig. 3.



Outside.—Nat. Size. Section magnified 2½ or 3 diameters.

from the bladder of Mr. B. Its form is well enough illustrated by the plate, where the flat surface of the section is seen enlarged, the rough outside being drawn of the natural size. The dark portion is prolonged from the centre into ray-like projections, and is, like them, composed of oxalate of lime. The intervening white substance is phosphate of ammonia and magnesia, with phosphate of lime. Two calculi resembling this one are described in the *Amer. Journ. of Med. Sci.*, vol. iv. p. 333. The present specimen is certainly a pathological curiosity, for whose singular form we are quite at a loss to account.

Dr. Darrach, in commenting on the different forms assumed by urinary calculi, mentioned that an organic mould had been discovered to be the ground-work of many; the salts being deposited around. This mould had, at least on a small scale, been lately produced artificially.

Dr. Mitchell spoke on the same subject, and stated further, that it was the belief of some of the French observers that even separate crystals had an organic stroma.

Necrosis of Head and Upper Part of Os Femoris removed by an Operation of Excision.—Dr. Addinell Hewson exhibited a specimen of necrosis of the head, neck, and portion of the shaft of the left os femoris, which he had removed the week previous, by excision, from the hip of a girl aged thirteen years. The girl had suffered with disease in her hip for more than two years, but had had no care whatever bestowed upon her during that time. She had been living on a truck-farm, near the city, where her father was but a common day-laborer. She had lost her mother seven years before by phthisis. Soon after the first appearance of the lameness in the joint an abscess formed and slowly worked its way to the front of the thigh, where it opened, about three inches below the groin. This opening shortly closed, and the head of the bone became dislocated on the dorsum ilii, and she walked about by leaning forward and resting on the ball of the foot. In the course of three or four months the matter reaccumulated and discharged itself through the old opening. About ten months since an abscess formed on the inside of the thigh; it grew but slowly, and was finally opened by the patient herself, with a needle, some three months before her admission into the Wills Hospital.

When she was admitted (Dec. 2d) this opening was still discharging a thin sanies, and on the back of her thigh, just at the lower border of the buttock, there was a large purulent collection. The integuments were here discolored to the extent of four or five inches in circumference, and the tumor beneath was large and fluctuating. The thigh was flexed almost at a right angle to the pelvis, and admitted of but little motion, although it was not firmly anchylosed. No crepitation or grating could be elicited.

Her health had been failing her for the last five months; her belly was tumid, but her bowels were regular, and their dejections natural. She was excessively pale and emaciated, and suffering from hectic. Her pulse was 130, feeble and flickering. There were no signs of pulmonary or other organic disease. She had acquired great mobility in the lumbar vertebræ by her efforts to hold herself erect.

The abscess in the region of the buttock was opened a few days after her admission into the hospital, and from it there were discharged about two ounces of fetid pus. No direct communication to the head of the bone could be detected through this abscess, nor was there any dead or exposed bone detected by the probe. After the tumefaction, however, had subsided, the pus could be made to flow out of the opening by pressure above the head of the bone, showing clearly that this abscess was connected with the joint.

The operation of excision was performed December 16th, and the head, neck, and three and a half inches of the shaft (measuring from the point of the great trochanter) were removed through a T incision, made over the joint on its outer side. The head of the bone was found lying just above and behind the edge of the acetabulum, where it had formed a deep cup of bone for itself. Both the head of the bone and this new acetabulum were profoundly necrosed. The old cavity was partially filled up with organized lymph, and entirely free of disease. The head and neck of the bone, necrosed through their whole thickness, had partially undergone molecular exfoliation. They were much reduced in size. The portion of the shaft removed in the operation was entirely denuded of its periosteum, saving the great trochanter, on which this tissue was dense and firm, and somewhat thickened. No exfoliation had occurred in the shaft. Here the necrosis appeared to be recent, and to involve only the external lamella of bone. The periosteal covering of this portion was almost entire, although separated by purulent matter from the bone.

Dr. Hewson remarked that the specimen illustrated very admirably, he thought, the progress of *morbus coxarius* in its advanced stages, and how very ineffectual the unaided efforts of nature must sometimes be to cure the disease. Here had evidently been disease involving only the fibrous structures of the joint in the first instance, or, if the disease was more profound, it affected only the surface of the head of the thigh bone, but not the acetabulum also. Suppuration ensued, and the capsule of the joint giving way, the head of the bone became dislocated on to the dorsum ilii. Here nature attempted a cure—a new cavity was formed to receive the bone—but sufficient time was not allowed for the repair to be perfected. The little patient not being restrained, used the limb too soon and too much, and so re-established the destructive action, or, perhaps, rather excited that which was latent, or had nearly subsided. But now the morbid process extended beyond its original limits. It now not only involved the head of the bone, but had attacked the new cavity formed for its reception. Necrosis of both these parts was the result, and nature's efforts to get rid of the dead tissue only involved a further destruction of the thigh-bone; for the pus formed in the process of *insensible exfoliation* which ensued, burrowed down along the neck and shaft of the bone as along a director, denuding those parts, and consequently causing their ultimate death. To what extent this destruction would have gone, it is impossible to say; but it must be evident to all who have seen the patient, that she would have sunk under exhaustion long before nature could have effected the separation of such a mass of dead tissue, even if she could have done so without further expense to the living bone.

The patient is now doing well, and the cure in her case is steadily progressing.

DR. HARTSHORNE, who was present at the operation, made some remarks on the state of the cavities in which the head of the bone had rested. The old was partially filled up; the new, it had appeared to him, communicated with this by means of a narrow passage.

Bright's Disease.—DR. HUMPHREYS exhibited a specimen of Bright's kidney, small, granular, and hard. No history attached. The patient was admitted for an injury, into the Pennsylvania Hospital.

DR. LEVICK alluded to the similarity of this kidney with the one described as the "gouty kidney."

DR. DARRACH spoke of the different forms of chronic Bright's disease, and the resemblance between them and some morbid states of the liver.

About four or five years ago, while resident physician at the Pennsylvania Hospital, his attention was attracted to the analogy existing between the diseases of the kidney and the liver, by the observation, at post-mortem examinations of these organs. Perhaps the best method to present the subject will be to briefly mention illustrative cases.

CASE I. was a granular kidney, small in size, consistence firm, much granulated, surface and outline very irregular, with thickening and solidification of the fibrous tissue about the hilus. Here we have an affection closely resembling in appearance that which has been termed cirrhosis of the liver, and although the fibrous tissue at the hilus of the kidney cannot be considered as analogous in function to that of the capsule of Glisson, yet in structure it is the same; and they are further alike that it is the fibrous tissue of the substance of the kidney which is the seat of inflammation and deposit in this form of kidney disease, causing thus shrinking and lobulation, or granulation. This, then, is the point to which Dr. Darrach would attract attention, that it is in this form of kidney affection we find the fibrous tissue of the organ much affected. This disease is quite distinct from the large white kidney, and not a more advanced stage of the same affection.

CASE II. The kidney was rather above normal size, consistence firm, smooth on the surface, and pale, and when it was laid open with the knife the cut surface appeared like wax (the demarcation between cortical and pyramidal portions barely discernible) of a uniform yellowish white color, smooth and polished.

This form certainly bears a close resemblance to the lardaceous (bacony) liver; the oily or fatty kidney is also an affection which is too notably allied to oily liver not to be here mentioned.

The more distinct forms of *chronic* kidney affection, commonly classed under the designation of Bright's disease, which have come under Dr. Darrach's observation, are—1st. The lobulated granular kidney, becoming in the last stage very small; met with in persons not especially addicted to drink, nor of a scrofulous nature. The case above referred to having occurred in a man who was a farmer, of good habits, but who had been much exposed to epidemic and endemic influences, having suffered from intermittent and remittent fever. The 2d forms are—*a*. Large yellowish-white kidney, with cortical and pyramidal portions sufficiently distinctly marked, often with yellowish deposits of granular matter in the neighborhood, or in the corpuscles, sometimes having the pyramidal portion reddened, while the interval is of a yellowish color, and again with both portions of much the same hue; *b*. The albuminous, waxy, homogenous kidney. 3d. The oily kidney, which Dr. Darrach has noticed more frequently than in the other cases, accompanied with a corresponding condition of liver.

DR. WOODWARD mentioned, regarding the fatty kidney, that he had frequently seen it unaccompanied by albumen in the urine In twelve cases of fatty degeneration of the kidney, albumen was only twice or three times present.

WEDNESDAY EVENING, Jan. 13th, 1858.

The President, DR. GROSS, and afterward Vice-President, DR. LA ROCHE, in the chair.

Cicatrix and Chalky Formations in the Lungs.—DR. LEVICK exhibited a specimen of cicatrix and chalky formations in the lungs, obtained from a patient aged eighty-two, whom he saw, with Dr. Stroud, at the Widow's Asylum. It was not known that the patient had ever had phthisis. She was latterly very weak and much emaciated, and the impulse of her heart was not distinct; but she died without presenting any remarkable symptoms.

Post-mortem examination.—The heart was found to be very small; it resembled a case of concentric hypertrophy seen by Dr. Levick some time ago; its walls being somewhat thick compared with the size of the cavities. The valves were healthy, excepting the aortic valves, which were slightly thickened by a deposit. A calcareous and atheromatous deposit was observed along the aorta, but did not extend into the large vessels. The arch of the aorta seemed rather dilated. The spleen was very small, firm, and covered with a fibroid deposit. The lungs were of a dark color; at the upper portion of each several calcareous bodies were met with. At the apex of the left lung a distinct cicatrix existed. Dr. Levick had no doubt that the little masses were tubercles which had undergone a calcareous degeneration, and thus the patient recovered.

DR. LEVICK then exhibited a specimen of general melanosis, which had been presented at the last meeting of the College of Physicians. The patient died of cancer of the pylorus. Melanotic masses were found in the lung, bronchial glands, liver, kidney, stomach, lips of the womb, intestines, and gall-bladder.

Dr. Levick spoke of the general tendency to pigmentary deposit in this case.

DR. MITCHELL stated that he had examined a small portion with the microscope, and found cancerous elements and numerous pigment masses and granules.

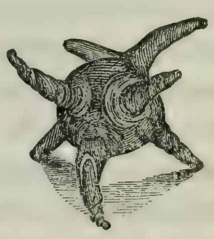
A discussion arose as to the connection of cancer with melanosis, whether pigment masses might not be extensively deposited without cancer.

DR. WOODWARD believed that they might, although they usually occur associated with it.

DR. STILLÉ thought that the evidence here was strongly in favor of cancer, as there was cancer of the stomach, and as evidently the bulk of many of the masses was not made up of pure melanotic matter, but of a whitish, firm substance.

Urinary Calculus.—DR. DARRACH presented a specimen, belonging to DR. PEPPER, of an oxalate of lime calculus, with projections, similar to the one exhibited at the last meeting, (see Fig. 4.) It was removed after death from a man, eighty years of age, along with several smaller ones. The drawing will give a better idea of its form than any written description can. The smaller calculi were of a yellowish-gray color, smooth, except at points; where there could be perceived, in some quite manifest, in others less so, the same disposition to become bossed as in the larger calculus. All the history which could be obtained of the case is, that the patient suffered very much, and a short time before death had a great deal of pain, which he thought was owing to retention

FIG. 4.



of urine. The physicans were unable to introduce a catheter, and after death the bladder was found about the size of the fist, and its walls much thickened.

Dr. Darrach did not believe the calculus had been formed around a foreign body.

Cancer of Cicatrix.—Dr. Addinell Hewson exhibited a specimen of malignant fungus, which attacked the stump of a thigh amputated by him some seven months previous, for a large encephaloid tumor growing from the periostium of the lower portion of the os femoris.

The disease had occurred in a lady, aged thirty-eight years, of marked tubercular tendency, and in whose family cancer had never before made its appearance. Most of the immediate family, except her parents, had died of phthisis. Both of her parents lived to an advanced age, and died of diseases peculiarly incident to that period of life. She had early in life several attacks of hœmoptysis. On the first appearance of the disease the symptoms of its malignancy were exceedingly tardy in manifesting themselves; for although she complained of pain in the limb for nearly ten months before it was amputated, it was really not until within about ten days of the time of the operation that a positive diagnosis of the nature of the disease was arrived at. This arose from the previous history of the patient: her appearance and her uncomplaining disposition. She was, as before stated, of a phthisical tendency, but appeared in good health, with a bright, clear complexion. The pain with which she suffered she complained of only occasionally, although she afterward confessed that it had been very constant. This pain was aggravated at night, and increased by pressure, but not by jarring the limb. The thigh continued but little swollen for a long time after the first manifestation of the pain, and there was no venous enlargement or discoloration and glazing of the skin until within a short time of the operation. Her case was, therefore, viewed for a long time as one of idiopathic periostitis, and treated as such; but as it progressed, as the limb became enlarged, the pain more vivid, and the general health impaired, in spite of the treatment resorted to for relief, the accuracy of the previous diagnosis became doubtful, and after several consultations and an exploration with a fine exploring trocar, the conclusion was arrived at that the disease was malignant. The use of the exploring needle really revealed nothing of itself, but greatly aggravated the disease. Previous to its use the tumor was increasing but slowly; after the exploration it grew so as to add half an inch in circumference to the limb in every twenty-four hours. Amputation was performed on the 2d of July, ten days after this exploration. The thigh was removed by the double flap operation, as high up as possible, with the tourniquet applied, and so loaded was the limb with adeps that a catlin nine inches long was just sufficient to transfix it; this was somewhat remarkable, as the patient was neither large nor fat in person. A large amount of blood was lost during the operation, owing to the compression by the tourniquet not being sufficient to arrest the circulation. The tumor proved to be an encephaloid mass the size of a large fist, attached to the periosteum; the bone had been denuded in one place by its pressure. The portion of the tumor which had been penetrated by the exploring needle was very vascular, and presented a marked contrast with the brain-like color and appearance of the rest. Although some erysipelas followed where the skin had been bruised in the efforts to make the tourniquet arrest the hemorrhage, everything did well for a time; the wound all healed up except a little point through which the femoral ligature had been discharged, and the patient was out and riding about, with a pulse between 80 and 90. So matters continued, until about three months after the amputation, when symptoms of a return of the disease showed themselves in the cicatrix. These became more prominent, and the whole scar became gradually involved in large fungus excrescences, which bled freely at times. The patient finally died, exhausted by the disease. Her suffering, however, was at no time after the operation ever so great as it was before.

The specimen exhibited the fungus disease involving the cicatrix through its whole depth. There were no signs of the disease having attacked the bone, which was exhibited with its edge well rounded off. It was, however, found, after sawing it through, to be very vascular. A remarkable circumstance noticed at the autopsy was that the adipose tissue of the stump was as thick as on the day of the operation, although the patient had become emaciated to an extreme degree before her death. This tissue was still two inches in thickness; the other tissues were all wasted away, so that the stump really seemed to consist merely of the bone, adipose tissue, skin, and malignant disease.

Exostosis of Scapula.—DR. GROSS exhibited, for DR. KERR, of China, a specimen of exostosis of the scapula, removed from a laboring man, aged sixty years, who was admitted into the Ophthalmic Hospital in Canton, in the summer of 1855, with a bony growth from the scapula, which projected about an inch and a half through the skin, giving rise to a constant discharge of pus. The tumor was attached to the inner border of the scapula, half way between the spine and the inferior angle. Its shape was irregularly cylindrical, three inches long, with a diameter of an inch and a half. One end extended half an inch below the under surface of the scapula, raising this bone that much above its ordinary level; under the end which rested on the ribs a bursa mucosa was developed. So little of the scapula was involved that it was only necessary to saw out a piece two and a half inches long by three-fourths of an inch wide. The patient sank from the effects of the operation, and died on the fifth or sixth day.

Enlargement and Induration of the Pancreas.—DR. STILLÉ exhibited an enlarged and hardened pancreas, taken from a patient aged sixty, whom he had seen in consultation, and who for two years had been suffering from dyspepsia, acid eructations, very dry mouth, deep-seated and dull pain at the epigastrium, vomiting of food, gradual loss of flesh, and during the last six months diarrhœa. No pain in lower part of abdomen. Urine free and appeared normal. During two months or more before death there was gradual emaciation and loss of strength; at one time purpura, which disappeared under the use of mineral acids and iron. Stools of the consistence and color of Indian-meal mush, slimy, and at times three or four a day in number; but generally, under the use of astringents, not more than two in three days. They presented no evidence of containing fat. No tumor of abdomen, nor tenderness of epigastrium, where deep pressure excited only a dull pain. No pulmonary symptoms of note. Some œdema of hands and feet in the last fortnight of life; death occurred by asthenia. Jaundice, it was stated, had at one time been present, but not as a marked symptom; while under Dr. Stillé's observation there was none.

Post-mortem examination.—No visible disease of exterior of bowels. Liver of normal color and size. No examination of viscera was made except of the pyloric end of stomach and of the pancreas; the former was healthy. Pancreas enlarged one-third in all dimensions; hardened. Under the microscope it showed a great increase of fibrous tissue, and in parts a considerable amount of fat.

DR. STILLÉ would not assert that the symptoms arose entirely from the pancreatic disease, particularly since Handfield Jones, after analyzing thirty cases of diseases of this viscus, renders it probable that "no symptoms give any intimation of the existence even of the most advanced pancreatic degeneration," and a similar judgment has been expressed by Dr. Chambers.

Dr. Stillé then read an extract from a case published in the *Lancet* of Nov. 10th, 1855, which resembled this in several points. He also alluded to one which he had examined a long time ago, in which acid vomiting, anæmia, with wasting away, were marked symptoms, and in which he thought it probable the symptoms were caused by a chronic disease of the pancreas. In conclusion, Dr. Stillé dwelt on the absence of satisfactory knowledge with regard to the symptoms of pancreatic diseases.

DR. MITCHELL alluded to the experiments of Bernard, who had found an affection of the intestinal villi to follow extirpation of the pancreas.

DR. HARTSHORNE referred to a case of pancreatic disease which had come under his observation many years ago. The symptoms, as far as he could distinctly remember them, were a constant pain in the neighborhood of the epigastrium, dyspepsia, loss of flesh, and vomiting. The man died suddenly, and on a post-mortem examination made with Dr. Van Buren, the pancreas was found enlarged and hardened. Its head was converted into a firm dense tumor.

Cysts from the Liver Coughed up through the Pulmonary Passages.—DR. RICHARDSON exhibited, at the request of DR. F. GURNEY SMITH, specimens of cysts from the liver, which had been given to Dr. Smith by a medical gentleman, who had also furnished a brief history of the case:—

Mrs. A., aged thirty-four; married ten years; without children. From girlhood has had symptoms of diseased liver, which, at intervals of one or two years, have produced acute paroxysms of pain and enlargement, that no treatment affected. Last winter was passed on the sea-board, near Boston, with general health good, but growing tenderness at the hypochondriac region; the side swollen even to distortion of the ribs; much pain, and two very tender spots, one in front, the other on the back, nearly opposite. Numbness in the arm and foot of the right side has been a constant symptom, with inability to lie upon that side. Febrile symptoms were occasional; the natural pulse being about 80, would rise to 95; respiration good.

Early in April last the symptoms of disease became more acute. The swelling of the side, pain, and soreness increased rapidly. Great pain in the top of the head, with acceleration of the pulse took place; for five nights she was sleepless, and rest was only finally procured on the sixth day.

Two days after this, without premonitory symptoms of any kind, there was a large discharge from the bowels of fetid, purulent, and bloody matter, which, continuing for two and a half hours, produced great exhaustion; so great that, for several days following reaction seemed doubtful. The stomach was too weak to retain more than a spoonful of even fluid food, and without nausea rejected almost everything but ice-water. This condition continued for about ten days; extreme emaciation followed; numbness of the extremities of the right side; night-sweats and swollen feet. Cough set in, with expectoration of frothy saliva at first, afterward sputa, resembling those of pneumonia. The tongue had a thick, white coat; the pulse rose to 120, feeble and wiry; the stomach was less irritable. By very attentive nursing the patient commenced to improve, and continued to do so for the next two months, though the same symptoms more or less existed. The months of July and August were passed at Center Harbor, N. H., without much further amelioration, and she returned to the neighborhood of Boston by September 1st. About this time cysts were first coughed up, one, two, or three in a day, of the size of a filbert or less, to that of a pea, all much torn. They have been closely examined by more than one observer, but not a trace of parasite has been found. The discharge of cysts became gradually less frequent, but more numerous and more variable in size. Sometimes, after an interval of five days, twenty or thirty even would be thrown off at one paroxysm of coughing, that lasted two or three hours. More recently these paroxysms have occurred once in ten days, and the cysts are discharged during perhaps the whole of two days. Some have been so perfect as to have but one small aperture, and have been inflated by the blow-pipe; some smaller than a pea have come up unbroken, but soon after collapsed. Their contents are apparently purely serous, though the same thick expectoration accompanies them as at first. With few exceptions, the walls of which are translucent, the cysts are opaquely white, and under the microscope exhibit only occasional striæ.

The present condition of the patient is with much less pain and suffering than she had last winter, though with less strength and more difficult respiration. She is able to go out in good weather, and takes the usual exercise in the house. Some numbness of the limbs and considerable soreness of the chest remains. The sputa contain some clots of blood. The paroxysms of coughing are exhausting, violent, and spasmodic, resembling hooping-cough.

DR. HARTSHORNE, in reply to a remark from one of the members of the Society, who considered the symptoms as inconclusive by which the hepatic origin of the cysts was attempted to be proved, supplied, from his knowledge of the case, some facts not dwelt upon in the report, especially with regard to the purulent diarrhœa. He also stated that the patient had been, and was being, narrowly watched by several physicians in Boston, who were satisfied of the hepatic origin of the cysts, and would give to the profession the full particulars of this interesting case.

ART. VIII.—*The Mortality Statistics of the Census of* 1850, *and a Review of the Letter of Dr. Edward Jarvis upon the Classification of Diseases.* By EZRA READ, M.D., of Terre Haute, Indiana.

IN the absence of a general registration law, the Government of the United States, in taking the census of 1850, made an effort, for the first time, to collect all the deaths, with their causes, which had occurred the previous year. Imperfect as it must have been, it was yet a matter of the greatest importance, and was but an earnest or foreshadowing of what may hereafter take place. It was fairly presumed that each family would have a distinct remembrance for a year, at least, of an event so impressive to every household. Most families, however, do not rely upon their memories, but keep a family record as a matter of reference.

Where no member of the family can write, some friend is found who performs this pious duty from time to time, as required, and the record is religiously preserved as a family history, and is recognized in courts of law as truthful. It is a prevailing custom, and so general that, in the absence of a registration law, this of itself, if a transcript were taken from each family, would form a very correct history of the births, marriages, and deaths of the country. Most families, too, are careful to ascertain the name of the disease of which its member died. Where medical attention was had, it may be presumed that there was sufficient precision in designating the cause of death. This, however, is not always to be relied upon, as the medical attendant may sometimes, from carelessness, give the name of the prominent closing symptoms, instead of the primary disease. As, for instance, a child dies in convulsions, caused by an acute disease. Here it may readily be said to have "died of convulsions," when, in reality, it may have been the result of diarrhœa, scarlatina, measles, small-pox, or any other acute affection.

Where there has been no medical attention, the accuracy in naming the disease cannot be regarded so perfect. Here, however, there is always some one found sufficiently skilled in diseases to give it a name. At all events, returns were made of the deaths under some name or head. It then became a matter of no small importance to reduce this crude matter to order, and to embody the various popular names under their scientific synonyms. It was especially due to the profession of medicine that this work should be done accurately, as it forms the embodiment of a mortality history for the middle of a century the most remarkable for progress of any in the history of the human race; and at a period when the science of medicine had attained a position greatly in advance of any that had ever preceded it. This record was made when the millions of our busy population were swaying to and fro under the mightiest impulses which ever controlled the human mind or ruled its actions. It was made when we rushed to the sea, and upon its surface, in multitudes, for the rich returns and gains of our prosperous commerce. It was made when the boundless prairies of our new States and Territories were dotted with human beings preparing new homes in a strange climate; and when the virgin forests were filled with the emigrant, surrounded by the pestilential exhalations of its shadowed surface. It was made when thousands of our citizens were engaged in constructing railroads in every State; when machinery was brought to its highest perfection; when the human mind was wrought to its highest tension in every pursuit that enriches, enlightens, or advances society. It was made when the highways of our country were thronged with a foreign population, just landed upon our shores. It was made when our gold-mines were inviting thousands of all ages and pursuits, by a long and perilous overland route, or by that which was still more fatal, the Panama route. It was made when great numbers of our population were submitted to almost entirely new physical conditions. It was made at an age when the body ran and the mind flew, when to rest was to retrograde. How vastly important then, to the character of this great age, that science should carefully indicate and truthfully preserve the names of the diseases which produced death among a people so variously located and so differently employed. It was due to other generations to transmit a faithful record of its diseases.

Every decade of years has its own peculiar diseases. Suddenly from those of a new country we have those of an old, so short is the time required, in this busy age, to change the new to the old. The comforts and luxuries attendant upon wealth bring with them a train of diseases unknown to those in penury and want, and *vice versâ.* Those of crowded cities differ from those of rural districts, and those of the industrious from the idle. Many others are provided against by the ingenuity of man. He drains the soil; he tills the earth; he surrounds himself with comforts which are protecting agents against disease. The pioneer encounters a class of ailments which yield to cultivation and improvement; hence it is that the diseases of new countries differ from those of the old. Hence, too, the necessity of transmitting to posterity an accurate and faithful account of our diseases, and the changes which are wrought from one decade to another, by habit and pursuit, by cultivation and drainage of the soil, by the introduction of new and improved machinery, by better ventilation, and by improved methods of heating public and private buildings, and, in fact, by all causes which induce a change in any way whatever.

To render this, the very beginning of our mortality statistics, as accurate as possible, Mr. De Bow, the Superintendent of the Census Bureau, invoked the aid of Dr. Edward Jarvis, of Massachusetts, to classify the variously named diseases which were found upon the marshals' returns. Notwithstanding this was a task of a good deal of labor and research, yet it might have been perfectly done, so far as the returns showed. Inasmuch as Dr. Jarvis, in many respects, failed to make a correct classification of diseases, and has placed them where they do not belong, and assigned to them erroneous names, I regard it as a duty I owe the profession of medicine to aid, as far as I can, in correcting some of his errors, and to see that the names of our diseases are truthfully classed and faithfully transmitted to those who may come after us. Dr. Jarvis was not responsible for any inaccuracies which were found upon the marshals' returns. He was not responsible for the proper or true signification of any terms which were too vague to admit of a faithful classification; but he was responsible for inaccuracies and erroneous classifications which he himself made, and which it was his duty to have avoided. He might have taken all the diseases of the returns which had not a specific signification, or which admitted of a doubt, and placed them under the head of *unknown*. All others could have been assigned to their distinct and known classes, and the popular names could have been translated into their scientific synonyms. Having done this his labors would have been faithfully executed. In his letter to Mr. De Bow, he states that he reduced the number of diseases from 148 to 114. Let us examine in what manner this was done.

"Chicken-pox and hives," he says, (*Mortality Statistics*, page 46,) "should be in diseases of the skin. Herpes, ringworm, and tetter are to be included in the same."

The three last being one disease, we then have three diseases—chicken-pox, hives, and herpes, having no other resemblance or analogy to each other than their general location upon the skin—placed together under one head, (diseases of the skin,) which conveys no more adequate idea of the cause of death than would the simple announcement, died of disease. It is not enough to declare that these diseases are not mortal, or that death was the result of some other disease. We are dealing with facts, and have no right to assume anything not expressed in the returns. It would have been more in accordance with the duty assigned him to have allowed these to remain just as returned, with a simple appended note stating that these diseases were not regarded mortal. The reader then would very properly have been permitted to draw his own inference. Again, he says:—

"Disease of the eyes *may* involve disease of the brain; but otherwise is not fatal. It should, therefore, be included in diseases of the brain and nervous system."

Upon this principle of reasoning, a very large class of diseases might be transferred to the same head. In fact, all which in their progress involve the brain and nervous system. In this respect he sustains his consistency, for immediately following he says:—

"Mumps comes under the same category as the last, (disease of the eyes.) It may be connected with disease of the brain, and it may coexist with other and fatal disease. It would be safer to put these cases in the *unknown*."

He seems here to have trembled at his own temerity, when he mixed together such dissimilar diseases, and united the *sociabile* to the *dissociabili*, and therefore scratched mumps from diseases of the brain and nervous system, and placed it with the *unknown*.

"Onanism, possibly, but not probably, was a cause of death. It wastes life and produces other disorders. Cases under this head should be put under the *unknown*.

"Suppression of the menses (amenorrhœa) is a symptom or consequence of many other diseases. It gradually happens in diseases of high excitement, as fevers, etc.; and also in diseases of waste,—consumption, scrofula, and cancer, especially uterine. It may be safer to put these cases in the diseases of the organs of generation."

Without transferring his remarks in full, I would state that he places *fluor albus* in diseases of the organs of generation; vaccination in the *unknown;* amputation in the *unknown;* cachexia in the *unknown.*

It occurs to me that the profession of medicine will not sustain him in placing so much heterogeneous matter in the *unknown*, especially as the above-named diseases in their heading are clear and specific, conveying clear and specific ideas of what is meant.

"Congestion is equally unintelligible, and should be in the same class, the *unknown.*"

Whatever may be its signification elsewhere, in all malarious regions there is nothing unintelligible in the term *congestion.* Its definition is "Excess of blood in the vessels of a part, with diminished motion of that blood." Wherever, then, this local hyperœmia takes place in a vital organ to such an extent as to interrupt its functions, death supervenes. This is of frequent occurrence wherever periodical diseases prevail. Sudden deaths arise from a functional interruption in some one of the vital organs—the stomach, liver, brain, or lungs. It is *congestion*, and this term has a signification which conveys to the mind of any medical man a perfectly correct and full idea of the cause of death, although it may not specify the organ congested. No other term would convey it, and there can be no more intelligent or significant heading than Died of Congestion. It is a term everywhere used by physicians in writing and speaking, and is well understood. In "Williams' *Principles of Medicine*," may be found a valuable section devoted to *congestion*, and yet we are told by Dr. Jarvis that it is "unintelligible."

Immediately following this he says:—"Congestion of the brain probably is apoplexy; yet it may not be. Other affections may have been intended. It should, then, be in diseases of the brain."

Apoplexy was never intended when congestion of the brain is used. Their signification is distinct, and they should have a separate head. The former has reference to those attacks where the patient falls down suddenly, deprived of sense and motion, and lies like one in a deep sleep. He is, in a moment, deprived of all volition, and is entirely insensible. It is a disease of all countries, and is rather consequent upon free living, and is most apt to seize those who have passed middle life and are of the apoplectic habit; while the latter (congestion) usually supervenes upon a chill, accompanied with intense pain of the head, which increases, with an imperfect reaction, until insensibility comes and death supervenes. Death, from this cause, is most common in malarious countries. It may occur in all ages and sexes, while apoplexy is rare in malarious regions, and is confined, as before stated, almost entirely to those who have passed the middle of life, and is rarely found to attack females. When he, therefore, places this disease in "diseases of the brain and nerves," he fails to convey to the mind that specific and precise idea that congestion conveys. Apoplexy and congestion of the brain should not be placed under one head, but should remain separate and distinct. After speaking of cramp and eruption, he again says:—

"Brain, congestion of, probably intended for apoplexy. Yet it may be used for other cerebral affections which are not revealed in the returns. I have placed *this*, therefore, in diseases of brain and nerves."

He manifests a stronger determination to blot out the word congestion than to study its import and give it the place it merits.

"Fever, bilious, is a most vague and uncertain term. In some regions it seems to be used for all sorts of fevers, and the word *bilious* for all sorts of difficulties of the digestive organs.

"Gastric fever is probably intended for inflammation of the stomach. Yet it is in many places used as vaguely in respect to fever as the word bilious.

"Winter fever is more vague than either of the last two. It may mean bilious, or typhus, or synochus. These three, with specific names, convey no specific idea, and they should be included under the general name of *fevers*, without further description.

"Congestive fever is merely a form or phase of typhus.

"Inflammatory fever is a name sometimes given to cases of typhus. These two are, therefore, included in typhus fever."

The term bilious fever has a much less extended signification than might be inferred from the foregoing paragraph. It has not a vague and uncertain meaning, nor is it used for all sorts of fever, but is confined to the intermitting and remitting fevers of malarious districts. Nor is the word bilious used for "all sorts of difficulties of the digestive organs," but refers to those cases where the patient has a foul and loaded tongue, with nausea of stomach and bitter taste in the mouth. In this respect it is specific enough, and should be placed under the head of remitting or intermitting fever, which are but different degrees of the same fever.

Gastric fever is nowhere used in any other sense, I think, than to designate inflammation of the stomach.

Winter fever has not a vague signification, as the doctor represents, but has a complete and exact meaning. It is the popular term for pneumonia, and never means anything else. Nor does it ever, as he states, mear bilious, or typhus, or synochus. No term in medicine has a more uniform and exact meaning. He places, however, bilious fever and gastric fever under one general head, that of *fevers*. I can scarcely conceive a greater error embodied in a smaller space than when he unites congestive and inflammatory fever, and places them under the head of typhus. They are separate and distinct in all respects; they are cognate in none. The one is a disease of summer and autumn, the other of the winter and spring. By what means can he make them one? Typhus fever would be greatly swelled beyond its true bounds, because all of the typhus, congestive, and inflammatory fevers are placed under typhus. The general name of *fever* would also be greatly extended, because *bilious*, *gastric*, and *winter fevers* are placed under it. Pneumonia would be lessened greatly below what really exists, because winter fever, which is its popular name, is placed under a different head. Most of the above are not convertible terms, nor are they synonyms. They should, therefore, be preserved distinct.

"Milk leg, not in itself fatal, yet was an accompaniment of the fatal disease. I include this in child-birth."

Milk leg, or its synonym, phlegmasia dolens, expresses just what we want, while child-birth may express many conditions; therefore the former should not be included in the latter.

He places canker, canker rash, and putrid sore throat under the head of scarlatina. The two first are rightly classed. The latter, I presume, is intended to express erysipelas, or black tongue. In the West putrid sore throat is so used. He includes diseases of the head in those of the brain. Inflammation of the brain in cephalitis. Inflammation of the lungs in pneumonia. Inflammation of the throat in laryngitis. Killed is included in accident, and lockjaw in tetanus. Some other diseases are then enumerated, which are very properly classified.

Wherein the returns of the cause of death were made under a scientific name, in no event should that have been changed or another substituted for it. Such a license would invalidate the truthfulness of the returns, and would render them unworthy the title of a record of the causes of mortality. Where popular names are used, it was obviously proper to use in their stead the scientific; yet, as a matter of history, the popular names should have had a separate place in the statistics, with their signification attached.

It is a matter of so much importance that popular names of diseases should be faithfully translated,—a matter of so much importance now and hereafter, that our mortality statistics should convey an accurate and exact idea of our diseases, that I would suggest to Government the propriety of forming a commission of physicians, one from each State, to superintend this department of the next census of the United States.

American Progress of Medical Science.

REPORT ON PRACTICAL MEDICINE FOR THE YEAR 1857.

By AUSTIN FLINT, M.D., Professor of Clinical Medicine and Medical Pathology in the University of Buffalo.

THE purpose of this report is to notice the more important of the contributions to practical medicine contained in the medical periodical literature of our country during the past year. Condensed abstracts of articles are given whenever practicable, and a summary of the author's conclusions when either the character or length of the papers precludes a more detailed analysis. In selecting contributions relating to practical medicine, articles treating of remedies, and, as a rule, those devoted to the consideration of the management of diseases by particular measures or methods, have been passed by. They will be embraced more appropriately in a report on materia medica and therapeutics. Contributions which relate to poisons are reserved for a report on medical jurisprudence.

In preparing this report, the various medical journals issued in different sections of the country have been examined. The reporter trusts that few, if any, important articles, within the range to which he has restricted himself, have escaped notice. He has not, however, been able to examine all the transactions of medical associations which have been published during the year, and it is a source of regret that among those which could not be seasonably procured is included the quarterly publication by the College of Physicians of Philadelphia.

The articles noticed are arranged under the following heads:—1. Fevers; 2. Diseases Affecting the Nervous System; 3. Diseases Affecting the Digestive System; 4. Diseases Affecting the Respiratory System, and 5. Miscellaneous. That other nosological divisions are not introduced, is owing simply to the fact that the important contributions to practical medicine in 1857 are found to be embraced under the foregoing heads.

The object of the report is strictly analytical. It is hardly necessary to add, that a critical examination of any of the articles noticed, or the discussion of subjects to which they relate, would have been out of place.

FEVERS.

Remitting Fever of Children.—In a paper read at a meeting of the Society of Statistical Medicine, in the city of New York, Dr. J. LEWIS SMITH presents some considerations in reference to the nature of the disease denominated *infantile remitting fever*, and to the proper mode of treatment.

The most eminent European writers (Barthez, Rilliet, and West) describe, under this title, a form of disease which they deem identical with the continued fever of adults. Drs. Stewart and Condie, of this country, authors of works on the diseases of children, which are extensively read, regard the affection as symptomatic of intestinal irritation or inflammation. Dr. Smith has treated many cases both in private and dispensary practice, and has been led to form an opinion of the pathology of the disease differing from the views of the writers just referred to. The cases which he has studied occurred in the upper wards of the city of New York, which, as he states, are in an eminently malarious situation. He regards the disease as in a large proportion of cases miasmatic. He gives the following facts in support of this opinion:—

"1. The disease is very prevalent in spring and autumn, and rare in mid-summer and mid-winter, like malarious affections. There are certain streets where I have known it to prevail almost like an epidemic in the vernal and autumnal months. If the disease were, as Dr. Condie states, 'in every instance, either a gastro-enteritis, an ileitis, or an entero-colitis,' how can this influence of the seasons be explained?

"2. Often, not always, the remissions are more marked than would be likely to occur in a symptomatic fever. The child may appear almost well in the morning, but in the afternoon and evening exhibit such intensity of symptoms as to cause the greatest anxiety on the part of friends.

"3. The symptoms are not altogether such as we should expect to find in a purely local affection. The patient will, it is true, when asked where he feels the pain, sometimes place his hand on the abdomen, and pressure upon the abdominal parietes not unfrequently produces great distress. Dr. Condie alludes to this tenderness, evidently believing it to be a symptom of inflammation. But I have always been satisfied that it was neuralgic, from the fact that pressure on the lumbar vertebræ, and frequently on the chest and limbs, caused as much suffering as when it was made on the abdominal walls. The patient, if old enough, will complain, too, of aching in the head, back, and limbs, which is more the symptom of an independent fever than of inflammation.

"Again, constipation is ordinarily present, unless in the last stages of the disease. Intestinal irritation or inflammation, sufficient to cause so intense and protracted a fever as is often present, would be more likely to cause diarrhœa.

"4. Children, even nursing infants, take intermittent fever; why, then, may they not take remittent fever, from malaria? In my class at the dispensary, children with these diseases are frequently brought in together.

"5. I have found that measures directed to the alimentary canal, beyond simple purgation, do more harm than good. They fail to ameliorate symptoms; they awaken and distress the child. Moreover, when remissions occur, quinine will materially abridge the disease.

"6. Death seldom occurs from this affection. In one or two fatal cases which have fallen under my observation, this result followed convulsions and coma; and Dr. Stewart remarks, 'Dissections have furnished but little light on the morbid condition of the system in remittent fever; for, on a fatal termination, the transmission to the brain is the ordinary course of the disease.' The mode of death, then, and the post-mortem appearances, do not comport with the doctrine that the intestines are the seat of the morbid process.

"Dr. Condie does not agree with Dr. Stewart, but attributes death to inflammation of the intestines. I do not think that the remittent fever which I have treated, if uncomplicated, ever terminates in this way, for I have never seen a case in which abdominal symptoms did not yield to simple measures.

"7. Continued fever of the adult is of rare, and infantile remittent of frequent occurrence in the locality of my practice. The latter is not then identical with the former, as it appears to be in London and Paris, from the descriptions given by Rilliet, Barthez, and West.

"The above facts appear to me conclusive that the form of infantile remittent fever, which it has been my lot to treat, has been generally of a miasmatic character.

"It is very important to understand the nature of this affection, as the treatment will vary according to the theory we adopt. If living in a malarious region, we embrace the Broussaian views of the American authors whom I have cited, and treat the fever as a local disease, we shall fail to ameliorate the symptoms, and be mortified and discouraged by the result, if I may judge from my own experience. My reliance at present is mainly on expectant measures, till remissions occur, and then on the exhibition of quinine. In cases thus managed, convalescence has been more speedy and certain than when opium, calomel, and counter-irritation have been employed to remove intestinal irritation or inflammation.

"At the risk of appearing presumptuous, I have thus presented a theory of infantile remittent fever not, indeed, novel,—for Taylor attributes one variety of it to miasm,—but different from that contained in any American and most European treatises on diseases of children. I am the more anxious that the true nature of the disease should be understood, because I believe that the accepted doctrine is exceedingly pernicious to practitioners in malarious regions, and especially to the younger members of the profession who rely more on books than experience for guidance. The fact, too, that remittent fever has been in my practice the most frequent affection of early life, in the vernal and autumnal seasons, gives additional interest to the subject."—(*New York Journal of Medicine,* Jan. 1857, p. 106.)

On the Different Methods of Treating Intermittent Fever, with the Results of Treatment in Sixty-nine Cases. By AUSTIN W. NICHOLS, M.D., of Buffalo.

The object in this paper is to study the effect of treating cases of intermittent fever without resorting to the preparatory treatment by emetics, cathartics, etc., which are still deemed important by many practitioners; and also to institute a comparison as regards relapses and the duration of the disease, between a section of country where the disease prevails to a great extent every year, and a region not malarious.

Of the 69 cases, 46 were treated in a malarious section, and 23 in a region not malarious.

Of the 46 cases occurring in a malarious section, 17 were treated at once with quinia, in doses sufficient to arrest speedily the paroxysms, and 29 received preparatory treatment—viz. ipecacuanha and calomel, or calomel combined with either rhubarb or jalap. Relapses were observed in 14 of the latter and in 4 of the former cases, the ratio being as 1 to $4\frac{1}{2}$ in the cases which did not receive, and 1 to $2\frac{1}{14}$ in the cases which received the preparatory treatment. The average duration of the disease, dating from the commencement of the use of quinia, was found to be less in the cases which did not receive preparatory treatment, being a fraction over six days; while in the cases which received preparatory treatment, the average duration was a fraction under eight days. Adding the period occupied by the preparatory treatment, the ratio is as $6\frac{1}{3}$ to $8\frac{1}{3}$ days.

Of the 23 cases occurring in a region not malarious, all had no preparatory treatment. Of these cases, in ten previous attacks had occurred. In the latter, the average duration of the disease, after treatment was commenced, was $3\frac{1}{3}$ days. In ten of the recent cases, the average duration was $2\frac{1}{2}$ days. Of the latter, relapses were observed in two cases; of the former, in three cases.

Comparing the results as regards duration and relapses in the cases occurring in the malarious section and not receiving preparatory treatment, and in the cases occurring in the region not malarious, the contrast is striking: the average duration in the former being $6\frac{1}{3}$ days, and the average of relapses 1 in $4\frac{1}{4}$; in the latter, $2\frac{17}{19}$ days, and the average of relapses 1 in $3\frac{3}{5}$ cases. These results are greatly in favor of the region not malarious.

The reporter analyses his collection of cases with reference to the types of the disease; the number of paroxysms in each type; the number of relapses and the duration in each type. He also analyses separately the cases of tertian type.

The following summary embodies the practical conclusions which he deduces from the results of his analytical investigation:—

"From the foregoing analysis it will be seen that in cases of first attack the duration is somewhat less, and the number of cases relapsing about one-half that in cases having had one or more prior attacks. In a section of country where this fever is prevalent to a great degree every year, or in a malarious region, the duration is nearly three times that in a country not malarious, and the relapsing cases occur as frequently even under the same plan of treatment. It will be found that in a malarious region the treatment of patients by quinia alone not only diminishes the number of paroxysms and abridges the duration of the disease, but that fewer relapsing cases occur than where a preparatory course of treatment has been adopted. Even in the analysis of 40 tertian cases, although the duration of the number of paroxysms are nearly the same under the two different methods of treatment employed, yet the cases of relapse are found to be *nearly twice* as numerous where the preparatory plan was adopted." —(*Buffalo Medical Journal and Monthly Review of Medical and Surgical Science*, January, p. 460.)

Treatment of Remitting Fever. By JNO. HERBERT CLAIRBONE, A.M., M.D., Petersburg, Virginia.

The practice of Dr. Clairbone, in cases of remitting fever, is embraced in the following quotations from an article entitled "Periodic *vs.* Typhoid Fever."

"It is in the treatment of these cases the 'triple base' of Maillot so accurately expresses the indications to be fulfilled—viz. 'To combat the visceral lesions; to oppose the return of the paroxysms; to prevent the occurrence of relapses.' To carry out the first, it may be only necessary, if the patient be seen in the paroxysm, to administer six or eight grains of the mild chloride of mercury, with as many of Dover's powder, and one or two of ipecac., applying a dozen or two leeches to the head or stomach, according to the force of the reaction and its concentration at either point. The early occurrence of the remission will afford opportunity to exhibit the anti-periodic, which will effectually meet the two latter. Fifteen or twenty grains of the sulphate of quinine given in one dose at this time, or in two doses of a few hours' interval, will usually cut short an attack. Indeed, I have seen it succeed, in summarily effecting this end, after the disease had already continued unabated for more than a week, and when a dry tongue, nervous tremors, and incoherency of language had apparently ushered in the typhoid stage. After two or three days of treatment, if the fever still continue, which is sometimes the case, we have found smaller doses of quinine, five or six grains, exhibited in the remission, to answer a very good effect—gradually neutralizing the poison of the disease, and hastening convalescence, without inducing any of the disagreeable symptoms of cinchonism. We sometimes combine the quinine with calomel, ipecac., and opium, at its first administration; and where there is much visceral engorgement, the antiperiodic is often thus more effectual.

"Cases subjected to this treatment in their early stages have not generally, in our experience, 'run into typhoid fever.' Of nineteen cases, not selected, but transcribed from our note-book of last September, the average duration of treatment was six days. Six more days would cover the average period of convalescence.

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"When the fever has persisted for one or two weeks, in spite of the treatment adopted, and the tongue begins to be dry, and brown, and fissured, and the bowels are irritable, we usually recommend, about once in twenty-four hours, four or five grains of Dover's powder, with as much of hyd. c. creta, if there should be a necessity for the latter in the condition of the secretions, and apply at the same time a mild vesicatory over the abdomen. We continue the use of the antiperiodic, however, exhibiting three grains of quinine or an ounce of the infusion of cinchona and serpentaria every six hours, alternating sometimes with fifteen or twenty drops of oil of turpentine.

"With regard to the use of purgatives. We have found them generally not only unnecessary, but positively prejudicial at any stage of the disease, and evincing, even the mildest of them, aptness to induce irritation of the bowels."

Treatment of Scarlatina. By JAMES D. HARPER, M.D., Minden, Louisiana.

After describing briefly the characters of an epidemic of scarlatina which prevailed in Minden in May, 1856, Dr. Harper gives the following account of his method of treatment, and the results.

"Of the 40 cases under my care during the epidemic, there were 19 of simplex, 12 of mild anginosa, and 9 aggravated cases of anginosa, some of which threatened to assume the malignant form. In some of the cases, seldom anything was employed beyond a saline laxative, repeated from time to time, as circumstances demanded. When the arterial excitement was very high, *cold water to the head and throat*, cooling drinks, and gargles of flaxseed and vinegar, constituted the treatment in a majority of the simple cases; in others, the chlorate of potash was added to the treatment, as recommended by Dr. Watson, with the happiest effect. The twelve mild cases of anginosa yielded pretty much to the same treatment as those of the simple form,—the more lavish use of *cold water*, and the occasional application of nitrate of silver or sulphate of copper, with the probang, constituting the essential difference in the treatment of these two forms of scarlatina. The troublesome itching of the skin, which is apt to supervene upon the appearance of the eruption, can be relieved to some extent by sponging the surface with cold water, which does away with the intolerable heat; brans of different kinds may be rubbed upon the body, and thrown into the bed of the patient, which soothes for a time.

"The nine cases, alarming in their character, underwent in the early stages, to a certain extent, the same treatment as those of the mild form; but as they advanced, the more threatening become the symptoms, such as great difficulty of breathing, from glandular enlargement, combined with a viscid and tenacious secretion, choking up the larynx; a more frequent pulse; extreme restlessness and jactation, doubtless arising from obstruction in the air-passages, with some disposition to diarrhœa, and evident tendency to congestion of the brain; in some, these symptoms were recognized at an early period; in others, were deferred until desquamation had commenced. The head and throat trouble was the distinguishing feature in these cases; pulse ranged from 125 to 180, with more than usual heat about the head, attended at times also by slight incoherency, and nervous twitchings of the fingers and eyelids. There is but little doubt that in most of these cases the excitement of the brain evidently arose from the condition of the throat; these symptoms were, however, promptly met, not by sponging, but by *pouring cold water* out of a pitcher, or some other convenient vessel, upon the head, giving the water a fall of from 4 to 12 inches; this was continued from 15 to 40 minutes at a time, or until the pulse was reduced 20 or 30 beats in a minute, and the head became cool. At this crisis, the patient would more frequently than otherwise go off in a refreshing sleep, lasting half an hour, more or less. Reaction manifested itself by the same restlessness, incoherency, and hurried respiration, but which would always give way to the impression of the water, thereby placing the patient in a condition highly favorable for recovery, other things being equal. In some of the cases *chlorine* was used as a stimulant and antiseptic with good effect.

"There was a condition of the throat which gave rise to much trouble, even after desquamation had in some instances almost subsided, and the patient otherwise convalescing; it was where the ulcer was so low as to be beyond the reach of the probang, and the little patient, not knowing the importance of raising the foul secretions, swallowed them, whereby the system became thoroughly inoculated with the animal poison, generating that condition of system well known as typhoid, and in one instance producing, as I am well convinced, that characteristic feature of the diseased state of the glands of Peyer, similar to that which accompanies genuine enteric fever, with a pulse from 125 to 180, a tympanitic abdomen, and considerable excitement about the brain. Cases of this character were treated pretty much as those of enteric fever, at the stage where similar symptoms were present, with the addition of cauterizing the ulcer of the throat, if accessible, which is most certainly the source of the mischief. A nourishing diet was given, also brandy or port wine, with a free use of chlorine, to rid, as much as possible, the secretions of their obnoxious properties. When the respiration became embarrassed or hurried, from flatulency, turpentine was administered; if any threatening of brain disease appeared, the patient was subjected to the cold water, and continued until such symptoms were allayed.

"This condition of things lasted from six to ten days. The motions from the bowels consisted mostly of secretions from the throat, occasionally tinged with fæcal matter; but so long as the throat remained in an ulcerated state, diarrhœa was invariably present; it could only be temporarily checked, as the source of the malady had to be reached before any permanent benefit could be realized, proving that the diseased throat and enteric symptoms bore the relation of cause and effect.

"The sequelæ of 'scarlet fever' are generally a source of much interest and uneasiness to the physician. Indeed, there is no one disease which presents a longer catalogue of secondary affections than scarlatina. Of the various diseases which are likely to follow scarlet fever, dropsy in some form is, according to my observation, the most frequent. Of the various forms of dropsy, anasarca is probably the one generally met with; it ordinarily makes its appearance from the last stages of desquamation to the third or fourth week following. Medical opinion is yet unsettled as to the form of scarlatina most apt to be succeeded by dropsy. Of the fifty-six cases enumerated, there were eight cases of anasarca, all of which supervened upon mild cases of scarlet fever, not one severe case of scarlatina resulting in dropsy of any kind. In the dropsies following this eruptive fever there is an almost total inaction of the kidneys, an inertness which seldom attends the disease originating from a different cause; it readily yields to active hydragogue cathartics and diuretics — the one to produce copious watery evacuations from the bowels, while the other incites the kidneys to increased action. An exclusive milk diet should be rigidly adhered to throughout the complaint. When the lower extremities are swollen to any great extent, a bandage applied, beginning at the toes and terminating at the knee, or high up the thigh, if preferred, has been found highly useful in reducing the effusion. After the effusion has been in a great measure removed, if the patient is perceived to be in an anæmic condition, some one of the mineral acids, or ferruginous preparations, should be immediately resorted to. A varied and nutritious diet, in this state of the system, is admissible.

"It is stated that the dropsies which follow scarlatina are sometimes dependent upon, or associated with, that peculiar uræmic state known as 'Bright's Disease;' if so, then a case thus dependent on, or associated with 'Bright's Disease,' would be found more difficult of cure than those which came under my notice.

"Various speculations have been indulged in regard to the prophylactic virtues of atropa belladonna in scarlatina. There are few who place implicit reliance in its preventive properties; others, again, firmly believe that it has the unmistakable power of *modifying*, if not preventing, an attack; while others, whose statements are equally reliable, denounce its virtue in preventing or modifying the disease, and, in this respect, as worthy only of the source from which it emanated.

"I gave belladonna, during the epidemic of 1856, to 20 children; 19 of them took it as directed, and one irregularly. Of the 20 children, the one only who neglected to take the medicine as directed had the disease; most of the 19 who escaped were not only exposed to the epidemic influence, but to direct contagion.

"With this experience, I have ranked myself with that class of the profession who, without relying implicitly on the preventive powers of belladonna, yet deem it highly useful in modifying and arresting, to some extent, the dreadful ravages of scarlatina."—(*New Orleans Medical and Surgical Journal*, May, 1857, pp. 743–746.)*

Hospital Treatment of Yellow Fever in New Orleans. By R. D. POWELL, M.D., Brunswick Co., Va.

Dr. Powell states that, having been a resident of the Charity Hospital in New Orleans in 1855, he had an opportunity of comparing different methods of treating yellow fever, and the plan which appeared to him most successful was the following:—A hot mustard foot-bath was promptly employed. Next, the infusion of orange-leaves given freely as a drink, and continued during the attack. As a purgative, castor oil combined with a few drops of laudanum. This was administered soon after the admission of the patient. Ice applied to the head to relieve cerebral symptoms, if the latter supervened; also, local blood-letting, by cupping or leeching.—(*Virginia Medical Journal*, June, 1857, p. 470.)

Epidemic Fever characterized by mild Erythematic Pharyngitis.

During the months of January, February, and March, 1857, there prevailed, in the city of Buffalo and its vicinity, a form of fever accompanied by mild pharyngitis, having a career of from three to five days, and generally, if not invariably, ending in convalescence. In a report made to the Buffalo Medical Association by the reviewer, the results of an analysis of twenty-three recorded cases coming under his own observation were given, and the question of the identity of the disease with scarlatina discussed. From the results of the analysis, the following deductions were drawn by the reporter:—"The disease was an epidemic fever, characterized by mild erythematic inflammation of the fauces as a constant local complication. Its character as essentially a fever is established by the febrile movement being in so marked a degree out of proportion to the local affection; in other words, evidently not being symtomatic of the latter, and by its running a definite although a brief career. It is a fever of from three to seven days' duration. Its epidemic character is sufficiently apparent. It has prevailed more or less extensively in the city for about two months, reaching its acme gradually, declining gradually, and at length disappearing, affecting both sexes and different ages without notable discrimination. As an epidemic fever its symptomatic features were very uniform. The erythematous affection of the fauces constitutes the only positive character, aside from the brief duration of the febrile career. The other symptoms uniformly present were only those incident to febrile movement; and the symptoms observed in a few cases—viz. the convulsions in one case, the retraction of the head in one case, etc., were only incidental events, not intrinsic elements of the disease. The small patches of white exudation observed in some of the cases do not suffice to establish any relation of the local affection to that called *diphtheritic* by Brettonneau and others. The occurrence of several cases repeatedly in the same family does not suffice to prove that the disease was propagated by contagion, since this fact is explicable on the supposition of the patients being equally exposed to an epidemic influence, and there being a marked discrepancy in the intervals separating the cases necessarily occurring in the same family.

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* An interesting article by Dr. Lutton, of Aurora, Indiana, on the diversity of symptoms in scarlatina maligna having already appeared in the pages of this journal, (North American Medico-Chirurg. Review,) No. for Nov., p. 912, is not here introduced.

The disease was considered as a species of fever distinct from scarlatina, on the following grounds: 1. The uniform absence of the scarlatinous eruption on the exterior surface. 2. The uniform absence of any connection with well-marked cases of scarlatina, occurring either previously or subsequently. In no instance was the disease preceded or followed by scarlatina in the same family. 3. Several of the persons affected being adults and persons beyond middle life. 4. Medicine was in no instance followed by the sequels of scarlatina—viz. rheumatism, serous inflammation, and especially dropsy. 5. In several instances the persons affected had had scarlatina.

Professor Rochester at the same time made a report on the same subject. Between January 6th and April 4th he had noted thirty-seven cases. In many instances he had been led to observe irregular intermittency in the febrile movement. The subjects in ten cases were of all ages and conditions. He regards the communicability of the disease as probable. If communicable, the period of incubation is short, the disease manifesting itself in some instances within twenty-four hours after exposure. In many of his cases the patients had had scarlatina. Two children who were very ill with scarlatina had this form of fever a month after their recovery.—(*Buffalo Medical Journal*, May, p. 718.)

DISEASES AFFECTING THE NERVOUS SYSTEM.

Hydrophobic Hysteria. By Prof. D. L. McGUGIN, A.M., M.D., of Keokuk, Iowa.

Professor McGugin reports a case of hysteria, in which the symptomatic phenomena characteristic of hydrophobia were exhibited. The patient was a young married female of extraordinary mental acquirements, and highly impressible. The attack occurred shortly after the death of an infant, her only child. It commenced with pain in the head, without febrile movement. The bowels were constipated, the urine pale, and an attempt at swallowing was undertaken with reluctance and performed with difficulty. Shortly after, she became subject to paroxysms, during which she complained of thirst and demanded water, but on bringing it to her lips violent spasm of the larynx was excited. "When first attempting to drink, the appearance of the water seemed to produce a slight shivering, as if of dread, and after some hesitation she would hurriedly, apparently with a feeling of desperation, seize the cup and with a sudden effort attempt to gulp it down, during which respiration was suspended; and after the effort at swallowing, her conduct resembled that of an individual who had been for a time immersed in water of a low temperature. Then followed a wild expiratory screech. During these fits her countenance manifested the wildest frenzy, and all the muscles of the body seemed tensely contracted." These paroxysms were excited by the unexpected entrance of strangers, a sudden noise, or a current of cold air.

Aphrodisiac symptoms supervened, and she finally fell into fatal coma. The case was treated by antispasmodics and the inhalation of chloroform. It is reported with reference to the simulated phenomena of hydrophobia.—(*Iowa Medical Journal*, July and August, p. 103.)

Epilepsy treated by Ligation of the Common Carotid Artery. By C. ANGELL, M.D., of Pittsburg, Indiana.

Dr. Angell has resorted to ligation of the common carotid artery on one side in two cases of epilepsy. The first operation was performed in July, 1857. The patient, a male, was twenty years of age, about five feet in height, large head, short neck, sanguine temperament, and of full habit. Epilepsy had existed for three or four years, the fits progressively becoming more frequent and severe. He had become partially idiotic. He had from fifteen to twenty fits during the forenoon of the day on which the operation was performed. The day after the operation he complained of difficulty in swallowing, and the left side became incompletely paralyzed. The paralysis continued, with difficulty of articulation and swallowing, till the next day, when he died in a comatose condition. The epileptic paroxysms did not recur after the operation.

The second operation occurred a few days after the first. The patient, a male, was forty years of age, of a full habit and sanguine temperament. Epilepsy had existed for seven years. For the last three years the paroxysms had recurred almost daily. The mind was much affected. He recovered from the operation satisfactorily, and had no return of the epilepsy for twenty-two days. At the end of that time he had a paroxysm on two successive days. Seventeen days after this a third paroxysm occurred, and about a month afterward a fourth. These four paroxysms were all that had taken place up to the time of writing the report, a period of a little more than two months. The paroxysms after the operation differed from those which occurred previously as regards premonitions. Prior to the operation, he had no warning of their approach; but after the operation, a sensation of dizziness preceded the attacks for several minutes, giving him time to provide against falling.

The patient declared that he felt better than at any time during the three years; some of his friends thought that there was a decided improvement in his general appearance and mental condition.

The report is made too recently after the operation to warrant any conclusion as to its permanent value in this instance.—(*North-Western Medical and Surgical Journal*, October, p. 446.)

To what Degree are the Intellectual Faculties affected in cases of Apoplexy and Hemiplegia? By BENJAMIN W. M'CREEDY, M.D., Physician to Bellevue Hospital.

This inquiry, irrespective of its medico-legal relations, is of interest and importance to the medical practitioner. Dr. M'Creedy brings to bear upon it the results of an analysis of cases collected from different authors, as well as instances falling under his own observation, and communicated to him by medical friends. From an examination of "a collection of cases of apoplexy," by Mr. Copeman, of London, published in 1845, he arrived at the following conclusions: "In all, out of a record of two hundred and fifty cases, fifty cases have been taken in which the patient had recovered from the first effects produced by the apoplectic stroke. They are all the cases contained in the book in which such recovery had taken place, and in which the cases were clearly of an apoplectic character. Yet in no one of the cases is there the slightest indication that the patient was left with a mind, I will not say reduced to a state of imbecility, but impaired in any marked degree. They all, as far as the mind is concerned, with the exceptions to be mentioned, recovered; recovered perfectly; were restored to their usual state; returned to their previous occupations. In two instances the faculty of speech was either deranged or lost, and in those instances their physicians assert that the faculty of language, not reason, was deranged. In the third instance the patient is stated to have recovered with an impaired memory, and with some confusion of thought; but a merchant, seventy-three years of age, who, after partial recovery from a severe apoplectic seizure, is enabled to labor for his support by writing for the weekly papers, may be esteemed to have still possessed a fair share of intellect and energy. The second attack left him yet more prostrate, very much weakened in body, and unable to do anything for the support of his family. From the third attack he never recovered; still there is nothing like imbecility: he lies for months in a feverish condition, alternating between coma and delirium, and even a few days before his death he partially recovered and talked in a rational manner with his wife."

The foregoing conclusions are corroborated by the results of an ex-examination of a series of cases contained in Andral's *Clinique Médicale*, and in the *Anatomie Pathologique* of Cruveilhier. These cases, like the preceding, are quoted in brief detail by the writer. In expressing the results of this examination, the writer says: "Here, then, are sixteen cases in which the condition of the intellect before the attack was obscured, in which the nature of the disease was verified by post-mortem examination—being all that are contained in the *Clinique Médicale* of Andral, and the *Anatomie Pathologique* of Cruveilhier, and reported by men whom every one will allow were competent, careful, and conscientious observers—in which the hemorrhage was situated in almost every part of the brain, presenting every degree of severity compatible with the continuance of life, many of them living for years after the occurrence of the apoplectic seizure, and yet in only two of these was there any decided improvement of the mind noticed."

The writer adds: "Perfectly in accordance with this have been the results of my own observations. At Bellevue, the great pauper hospital of the city, there are always a number of hemiplegiacs; but since my attention has been directed to the subject, I have seen no case in which hemiplegia has been the consequence of a well-marked apoplectic seizure, in which I have found the intellect seriously impaired. In some of these cases the first impression of the observer is wholly unfavorable to the intelligence of the patients; the distorted countenance, the impaired speech, and the motiveless tears or laughter, give them an appearance of utter imbecility; yet a patient examination will commonly discover an amount of intelligence entirely unexpected." * * * * "From the facts given above, no other conclusions can be drawn than that any impairment of mind, as a direct consequence of apoplexy, after the patient has recovered from its primary effects, must be an exceptional occurrence. That the apoplectic seizure may hasten the approach of senile atrophy of the brain is, as before stated, probable; when atrophy has already commenced, an apoplectic attack may undoubtedly quicken its progress, and, in such a case, the friends of the patient would naturally attribute the rapid decay of the mind wholly to the apoplectic seizure. This, I think, I have myself seen; and as apoplexy becomes more common as life advances, such cases may not be unfrequent. The confusion of mind, the difficulty in pursuing a train of thought, of which apoplectics are apt to complain, is to a great extent the mere result of diminished nervous energy. They comprehend well, and judge correctly, but, before their general health is confirmed, they can no more think continuously than they can take a long walk, or perform any other act demanding a considerable expenditure of nervous force. It is not the brain specially that is affected—it is the system at large. Of all the faculties, memory, either special or general, is most apt to be impaired, and this impairment patients are always ready to admit and complain of. As the patient recovers, the memory commonly improves; and if no new attack supervene, this improvement is progressive for years." * * * "Whence, then, arises the number of imbeciles who are to be found in every almshouse? Partly, doubtless, from the cases already mentioned, in which senile atrophy is prematurely caused, or its progress hastened by the occurrence of apoplexy. And let us recollect the state of isolation and neglect from which such persons frequently, often necessarily suffer, is in itself a main cause of a weakened intellect: the mind rusts out for want of exercise."

The writer details a series of cases in which, while the hearing remained unaffected, the patient's consciousness entire, and no delirium, the faculty of speech was either lost or perverted. He remarks on these cases as follows:—"Here, it will be seen, are eleven well-marked cases of hemiplegia, three of them complicated with epileptic convulsions, and all of them with loss or perversion of the faculty of speech. Besides the cases here recorded, three more have come to my knowledge the subjects of which, I believe, are still living. This shows conclusively the loss of speech, as an accompaniment of hemiplegia, to be no *very* rare occurrence. Of the whole fourteen cases, two have perfectly recovered the use of speech; two have recovered it to a partial and limited extent; the others still, I believe, remain speechless. From the cases recorded in the journals to which I have access, I believe that recovery from perversion of the faculty of speech is more common and perfect than when the power of articulation is either wholly lost or confined to a few monosyllables. Direct medication, except in so far as it improves the general health of the patient, seems to have no effect on the lost faculty; more is to be hoped for from careful, long continued, and well-directed exercise of the local organs by the patient himself."

The foregoing conclusions are certainly at variance with the views inculcated by medical writers and commonly held by practitioners. The general belief is, that after an apoplectic seizure, as a rule, the mind is more or less impaired, and in severe cases the patient is apt to fall into a condition of partial or complete imbecility. Epilepsy is also supposed to tend intrinsically to induce deterioration of the mental faculties in proportion to the frequency and severity of the paroxysms. Assuming that the writer's conclusions are correct, it is in a great measure owing to the prevailing error on the subject that the faculties of the mind are, in a certain proportion of instances, permanently damaged; and it becomes a very important point in practice to enjoin, under judicious restrictions, that degree of exercise of the mental faculties which shall secure their healthful if not vigorous activity. This practical point is especially applicable to the management in cases of epilepsy. The reviewer has long entertained the opinion that, in this affection, the mental deterioration which is frequently observed is not due so much to an intrinsic tendency of the malady as to the isolation and inactivity incident to it. With reference to epilepsy, the author of the highly interesting paper which we have reviewed, states that he has "repeatedly seen and prescribed for a person who has had epilepsy for *thirty-three years*, occurring several times in every month, and sometimes eight and ten times a day; in whom, though there is obvious enlargement of one side of the head, and much headache, and the tongue bears the marks of countless lacerations, yet it is impossible to discover in this person the least change in her mental condition." He adds, that "both the medical profession and the judicial bench of this city can each furnish at least one illustration of the distinction and usefulness to which persons who have been, or still are, subject to epilepsy, may attain."—(*New York Journal of Medicine*, September, p. 203.)

Case of Ecstasy; reported by A. W. NICHOLS, M.D.

This singular and rare neuropathic disorder was exemplified in the case of a German, a mechanic, aged twenty-five years, admitted, August 1st, into the male ward of the Buffalo Hospital of the Sisters of Charity, under the charge of Dr. Flint. He was apparently in a state of insensibility when admitted, and could not be roused to any manifestation of consciousness. On raising the eyelids they remained open for some time, and he apparently took no notice. Flies creeping on the face, and even on the conjunctiva, did not disturb him. The respiration was perfectly normal; the pulse 76 and regular; no distension nor tenderness of abdomen. Drinks and nutriment introduced into the mouth were retained for some time and mostly escaped, a small portion being swallowed.

He lay motionless, not changing his position nor giving any indication of suffering. A bottle of ammonia applied to the nostrils occasioned contraction of the orbicular muscle of the mouth and flushing of the face, but no other manifestation of discomfort, nor efforts to escape from the inhalation. His countenance denoted quiet sleep.

He remained in this condition until August 4th. At the end of this period the only change consisted in his keeping the eyes opened a part of the time, apparently taking no notice, the eyes fixed in one direction, winking but seldom; and in his voluntarily altering his position from lying on the back to lying on the side. The catheter was introduced without resistance on his part, or difficulty, and a quart of urine removed. The iris, all along, was sufficiently mobile. The only treatment pursued up to this time consisted of enemas of spirits of turpentine and the tincture of assafœtida, with the forcible administration of brandy and nourishment.

On the 5th inst. there was marked improvement. He lay with his eyes open, and the countenance indicated more intelligence. He made slight, ineffectual efforts to protrude the tongue. He had asked for drink; complained of inability to hear, and for a time wept violently.

On the 6th his condition was not so good; he resisted taking food; lay with eyes open, but offered to take no notice. He passed urine in bed. No dejection since his admission.

He remained without any material change till the 8th inst. Firing, with a hammer heated by boiling water, was resorted to. This was borne for some time, but on continuing the application he at length began to make vigorous resistance, and finally drank brandy and water freely. He could not be made to speak.

On the 10th he took drinks and nourishment freely, and replied to questions. The previous day the direction had been given at the bed-side to resort to severe firing if the speech were not recovered.

On the 12th the patient was taken from the bed and seated in a chair. He remained passive, and his expression denoted great dejection. He did not reply to questions, and nourishment was given with considerable difficulty.

On the 13th he was carried into the open air. On the 14th there was a marked change. His expression was entirely altered; he took notice, smiled, and offered his hand. Walked of his own accord, with a little aid.

On the 15th he relapsed into his former condition, and firing was resorted to. He remained in this condition till the 18th. Firing and the cold douche were employed. By these means he was made to take nourishment. By the same means he was at length made to groan, to speak, and get up. For several days his countenance had an air of extreme abstraction. The bowels remained constipated.

On the 26th of August he walked about, ate freely, and answered questions readily, but talked as if the mind acted slowly. He was still disposed to keep his eyes fixed on one object, and, except when addressed, had a contemplative aspect. He gradually improved, and left the hospital reporting quite well, September 23d.

It was impossible to obtain definite information respecting the state of his mind before and during the state of ecstasy. There was no evidence that the attack was due to religious excitement. A similar attack had occurred several months before.—(*Buffalo Medical Journal*, August, p. 139.)

Case of Trismus Nascentium, ending in recovery. By H. L. BYRD, M.D., Professor of Principles and Practice of Medicine, in Oglethorp Medical College.

Professor Byrd states that, in a practice of sixteen years, he has seen over thirty cases of trismus nascentium, all of which terminated fatally, with the exception of the single case now reported. The child, a negro, was attacked eight days after birth. The case presented no unusual features. The treatment consisted of flaxseed poultices over the abdomen; enema, containing a drachm of castor oil and ten drops of the spirits of turpentine, and five drops of spirits of turpentine and paregoric, given by the mouth every two hours. The latter was given irregularly, owing to the spasms. On the fourth day, the symptoms being improved, one-fourth of a grain of the sulphate of quinia was given every three hours, alternating with eight drops of the spirits of turpentine. The reporter attributes the recovery mainly to the spirits of turpentine.—(*Charleston Medical Journal and Review*, July, p. 474.)

Recovery from Paralysis.—Paralysis of considerable duration, it is well known, may continue indefinitely after the primary condition inducing it is removed, and when the nervous and muscular systems have not suffered lesions which are incompatible with the recovery of the power of voluntary motion. The paralyzed muscles do not, of their own accord, return to the dominion of the will, but efforts directed by the physician to this end are indispensable to recovery. This practical point is not always sufficiently considered by practitioners, and many persons remain paralytics in default of proper measures to effect recovery. This fact is illustrated by the reported success of gymnastic exercises in the hands of Dr. J. P. Batchelder, of New York. By a system of muscular training, patiently pursued for several months, he has succeeded in accomplishing surprising results in cases of paralysis of several months' standing.—(*Editorial Correspondence in Medical and Surgical Reporter, Burlington, N. J.*, July, p. 356.)

Intercostal Neuralgia. By A. W. NICHOLS, M.D.

Dr. Nichols treats of the causes, symptoms, diagnosis, and treatment of intercostal neuralgia, his remarks being based on an analysis of twenty recorded cases. The results of the analysis go to show that this affection generally occurs after puberty, and under thirty-five years of age. It occurs in persons not enfeebled, but apparently possessing good constitutions. It appears to be developed in those who are engaged in active occupations rather than in those of sedentary habits. All but two of the cases analysed were observed in the latter part of winter and early part of spring. The left side is more commonly affected than the right. Both sides are rarely affected. It is sometimes observed in the course of pulmonary tuberculosis, and frequently during or after an attack of periodical fever.

As regards the symptomatic phenomena, the histories of these cases confirm the correctness of the descriptions of the affection given by Nicol, in 1818, and, more recently, by Bossereau and Valleix. The most distinctive feature is the existence of pain, and tenderness on pressure, limited to particular points on the thoracic and abdominal parietes. These points are, *first*, slightly to the outside of the spinous processes of the dorsal vertebræ and almost over the dorsal-intervertebral fosamina, just opposite the divisions of the spinal nerves into their anterior and posterior branches; *second*, about midway between the spinous processes and the margin of the sternum; and, *third*, near the edge of the sternum, or on the abdomen at the side of the median line. The pain or tenderness may be limited to one or two of these points, and often all three are affected. The tenderness is very circumscribed, extending over a space which may be covered with the ball of the thumb.

The treatment which seemed most efficient consisted of vesication, anodynes, and tonic remedies. The affection was found to persist, in several instances, for some weeks.—(*Buffalo Medical Journal*, July, p. 65.)

Cases of Partio-General Paralysis, or the Paralysis of the Insane. By PLINY EARLE, M.D.

Dr. Earle proposes the above title for the affection, first described minutely by M. Calmeil, of Paris, called by the French writers *Paralysie général progressive*, or *Paralysie des Aliénés*, and by the English and Americans, *Paralysis of the Insane*. He reports five cases. The morbid appearances after death in these cases are given. One of the cases is remarkable from the fact of recovery having taken place. Dr. Earle states that this is the only instance of recovery that has come under his observation; and that M. Calmeil, who has been connected with the hospital for the insane at Charenton, Paris, for twenty years, has never known a case of complete recovery. The cases are reported in full detail, and do not admit of being condensed.—(*American Journal of the Medical Sciences*, July, p. 36.)

DISEASES AFFECTING THE DIGESTIVE SYSTEM.

Cholera Infantum. By EDWARD H. PARKER, M.D.

In a paper read before the New York State Society, February 4th, 1857, Dr. Parker discusses the following propositions, as those generally held by the profession, or, at least, as generally given by our systematic writers:—

1st. "Cholera Infantum is a disease peculiar to this country, though not entirely unknown in Europe.

2d. "That Cholera Infantum is almost entirely confined to large cities, and is rarely seen in the country.

3d. "That the symptoms, course, and pathology of the disease entitle it to a separate place in our nosological tables.

4th. "That the treatment is to be distinct from that of diarrhœa, on the one hand, and dysentery on the other.

5th. "That perhaps the most alarming symptoms are those of hydrocephalus, occurring in the advanced stages."

With reference to the *first* proposition, he quotes descriptions by Dr. West, of London, of an affection called *inflammatory diarrhœa,* and by M. Bouchut, of Paris, *entero-colitis,* either of which would answer for a description of the cholera infantum of this country.

The *second* proposition he deems incorrect, and adduces facts obtained from the mortuary statistics of the last century to show that the affection is as fatal in the country as in the city.

As regards the *third* proposition, the writer arrives at the conclusion that it is impossible to draw a line, on the one hand, between cholera infantum and simple diarrhœa, and, on the other hand, between cholera infantum and entero-colitis. He claims, therefore, that cholera infantum is, in fact, a name given to a particular condition arising in other diseases.

The foregoing conclusion respecting the *third* proposition involves a denial of the *fourth;* for if there are no peculiar symptoms, course, and pathology, there is no separate and peculiar treatment.

In commenting on the *fifth* proposition, the writer calls attention to the distinction between the *hydrocephaloid* and the *hydrocephalic* condition; the former, as described years ago by Marshall Hall, and more recently by Gooch and West, being the condition occurring in the course of cholera infantum, and demanding the treatment due to anæmia and exhaustion, and not to encephalic inflammation.

In conclusion, the writer presents the following propositions as expressing his views, in contrast to the propositions already given as expressive of the opinions more commonly entertained.

"1. The condition to which the name of cholera infantum is given is not a separate and peculiar disease, but a collection of symptoms attendant on certain stages of other diseases.

"2. This condition is recognized by European authors in their treatises, though very properly it does not receive a separate title.

"3. That the principles of its treatment are the same as those of diarrhœa and entero-colitis.

"4. That hydrocephalus is rarely, if ever, an attendant or sequent of it, but that the hydrocephaloid disease is very usual."—(*American Medical Monthly,* May, p. 257.)

Epidemic Dysentery, as it Prevailed in the Sequatchee Valley in 1856. By A. FRAZIER, M.D., Pikeville, Tenn.

In the situation above mentioned, within a range of ten or fifteen miles down the valley, there occurred, during the summer and autumn of 1856, about sixty deaths from epidemic dysentery, in a population of not over two thousand. The epidemic was characterized by typhoid symptoms, which were often present from the commencement. Dr. Frazier argues that in an epidemic form the disease is something more than an inflammation of the mucous membrane of the intestine; that it involves a morbid condition affecting the entire system, of which the intestinal inflammation is the local expression. He opposes the notion, still adhered to by some practitioners, that the pathology of the disease consists in congestion of the portal circle proceeding from hepatic obstruction. His experience leads him to reject the free administration of calomel, especially in epidemic dysentery with an adynamic tendency. Stimulants and sustaining diet he regards as highly important in such cases.—(*Southern Journal of Medical and Physical Sciences*, April, p. 231.)

Dysentery and its Treatment. By HENRY TIEDEMAN, M.D., Philadelphia, 1857.

In a pamphlet of twenty-four pages the author defines, as far as the limited space admits, his views of the nature of dysentery. He attributes dysentery to inflammation of the sub-mucous areolar tissue of the rectum, extending to the mucous membrane. This inflammation is caused by disturbed circulation of the blood in the liver. The author rejects miasma as a cause of dysentery, and denies that dysentery is a malarious disease, or has any affinity to intermittent fever, or has anything to do with a virosus or toxicosis.

The first symptoms of dysentery are caused by hyperæmia in the capillary system of the rectum, in consequence of repletion in the large veins of the liver and disturbance of circulation in those vessels. The author draws a parallel between hemorrhoids and dysentery, and adds, that he never found a patient afflicted with hemorrhoids who was attacked by dysentery, unless the former disease had been interfered with by improper treatment.

According to Dr. Tiedeman there are only two reliable symptoms of dysentery—viz. tenesmus and the dysenteric sedes. All the generally adopted different species of dysentery are rejected as mere complications or modifications of the disease.

The treatment is very simple, and therefore would be highly recommended. The author states that of a large number of patients which he has treated during the last six years, none died. The treatment employed is only applicable in the first two stages. The patient very seldom reached the second, never the third stage of the disease. There were but few cases where the disease lasted to the seventh day; most cases had already changed so favorably on the third day that the patient could be left to himself, only a proper diet being ordered.

Of all the newly recommended and of the old nearly stereotyped anti-dysenteric remedies, as mercury, lead, opium, ipecacuanha, colombo, etc., Dr. Tiedeman made use of none since the adoption of the following treatment.

After considering the state of the intestinal canal, which, independently of dysentery, may require an emetic, a purgative, or neither of both, *nitrate of potash* is given in solution or emulsion, in doses according to the age or the constitution of the patient or the intensity of the disease. After each dysenteric evacuation, no matter how often it occurs, an injection of cold water or even of ice-water is applied.

This treatment is to be continued until tenesmus ceases, and regular evacuations will generally follow, which, in the majority of cases, happens in from six to twelve hours; when the evacuations do not take place, a dose of castor oil is administered.

When tenesmus is overcome, when the dysenteric discharges have ceased, when the fever is subdued, and fæcal evacuation is re-established, (all of which is often accomplished in twelve hours,) a solution of quinine is given and a better diet allowed.

Dr. Tiedeman says:—"In the first two stages of the disease, for every age, both sexes, every constitution, to persons of every mode of living or occupation, in every epidemic, every season, every so-called species of the disease, this treatment has proved applicable, and has often been crowned with surprising results."

The author is further of opinion that this treatment may be also useful in tropic, camp, and other so-called dysenteries, with which he is acquainted only from report.

Intussusception of the Bowels. By J. M. HAMMER, M.D., Sevierville, Tenn.

Dr. Hammer reports the following extraordinary case:—"The patient was attacked in December with acute lancinating pain in the abdomen, paroxysmal, recurring after short intervals; the pulse 90, strong and full; nausea; great anxiety. He was bled freely, anodynes were administered, but relief was not obtained for forty-eight hours; he then slowly recovered. Further details of the history and treatment are not given. A little over a month afterward, Dr. Hammer was summoned in haste to the patient, who lived at a distance of six miles. When he arrived he found the patient comfortable, but was informed that a very strange worm had been passed from the bowels. On examination the worm proved to be 'about twenty inches of the *ileum*, with its mesenteric glands,'" etc. The reporter concludes that there had been an intussusception, followed by adhesion and sloughing away of the invaginated portion of the intestines.

The health of the patient remained good until the following spring, when, after eating a hearty meal of onions and working over his farm, he became suddenly ill and died in a few hours. A post-mortem examination was not made. (*Southern Journal of the Medical and Physical Sciences*, Sept., p. 181.)

Accidental Swallowing of the New Cent and other Solid Bodies.

At a meeting of the Buffalo Medical Association, Dr. Nichols reported two cases in which the new cent, composed of nickel and copper, (coinage of 1857,) had been swallowed and passed. No unpleasant symptoms were produced in either case. In one case the coin was slightly corroded, and in the other scarcely tarnished. The less amount of copper in the new cent than in that of the old coinage, and the fact that nickel, when alloyed with other metals, seems to render the latter less liable to oxidization, renders the accident harmless, in opposition to statements made in some newspapers, in consequence of which the accident is likely to occasion needless alarm. The symptoms imputed to poisoning from this source were probably due to the use of emetics and cathartics, which are quite unnecessary.

Professor Hamilton reported, at the same meeting, a series of cases falling under his notice, in which various metallic substances had accidentally been swallowed. The most remarkable of these cases are the following:—

A gentleman, aged thirty years, swallowed a twenty dollar gold piece. Two years afterward it had occasioned no inconvenience, and he was not aware that it had ever passed.

A child, eight years old, swallowed a glass door-nob, weighing 162 grains. It passed on the third day; it occasioned only slight inconvenience.—(*Buffalo Medical Journal*, October, p. 288.)

Perforation of the Cæcum and Appendix Vermiformis.

A case of perforation of the cæcum, accompanied by impaction of fæces in the appendix vermiformis, is reported by WM. WESLEY WILKINS, M.D., in the *New Hampshire Journal of Medicine*, October, p. 289.

The patient was a boy, fifteen years of age, who came under the care of Dr. Wilkins, having been ill for a week. He was attacked at first with chills, followed by diarrhœa and vomiting, and pain in the abdomen. Death took place eight days afterwards, with the symptoms of peritonitis. The appendix was partially adherent to the cæcum, and contained a solid lump of hardened fæces half an inch in length and three-eighths of an inch in diameter. The cæcum in contact with the appendix had sloughed, and through this opening the contents of the intestine had escaped into the peritoneal sac. The evidences of peritonitis coexisted.

At the session of the New York Pathological Society in July, Dr. Sands presented a specimen illustrating ulcerative disease of the vermiform appendix, accompanied by a history of the case. The patient, an artist, aged twenty-two, while engaged in his studio, was suddenly overcome with a sense of exhaustion and fainted. He soon recovered, breakfasted, and continued at his labor till noon, when he dined freely on beefsteak and porter. Several hours afterwards he was attacked with severe pain in the right iliac region, and great prostration. Symptoms of peritonitis were declared, and he died on the fourth day after the attack. The appendix was fastened to the inferior and posterior part of the cæcum by adhesion. It was dilated about its middle from the presence of an intestinal concretion, in which were found a number of strawberry seeds, and small solid particles supposed to be earthy phosphates. The mucous membrane of the appendix was the seat of sloughing ulceration, which near its extremity had perforated the several coats, permitting the escape of feculent matter, and giving rise to acute peritoneal inflammation. Besides these morbid appearances there existed disease of the solitary and agminated glands of the small intestine, the glands having the aspect which they often present in typhoid fever.—(*American Med. Monthly*, October, p. 231.)

Professor Rochester reported to the Buffalo Medical Association a case of perforation of the appendix, and stated that during the last five years five cases had fallen under his observation. The patient in this case was a lad.

He was seen first two days before peritonitis was declared. At that time there existed simply a little diarrhœa. For the two days following he seemed to be but slightly ill. Peritonitis finally became developed, and death occurred on the fourth day. The appendix was firmly adherent to the rectum. Being carefully separated, and the cæcum removed, several small perforations were discovered. A hard body about the size of a common bean occupied the cavity of the appendix; it consisted of fæcal matter arranged concentrically around a nucleus of several stony particles of the size of a pin's head.

Professor Rochester thinks this cause of peritonitis to be more frequent than is generally supposed. It is probable that perforation of the appendix is sometimes overlooked in making post-mortem examinations. He finds the literature of the subject meagre; but it is treated of more fully by Rokitansky than by any other writer.—(*Buffalo Med. Journal*, October, p. 280.)

Cases of Diseased Gall-bladder, etc. By WILLIAM PEPPER, M.D., one of the Physicians to the Pennsylvania Hospital.

Dr. Pepper notices some of the most prominent difficulties attendant upon an investigation of the various diseases of the gall-bladder, and reports several cases with the view of inducing other observers to pay more attention to this obscure class of affections.

In case No. 1 the patient, a young man, aged twenty-six, presented a fluctuating tumor, extending nearly down to the crista of the ilium. After a preliminary exploration, a small trocar was introduced, and two or three ounces of thick muco-puriform matter, tinged with bile, escaped. A larger opening being necessary, it was resolved to employ the caustic potash for this end. The rapid decline of the patient, however, rendered it advisable to desist before the object was attained. In the mean time the tumor became tympanitic on percussion, the line of dullness varying with the position of the patient.

On inspection after death, in the right lobe of the liver were two abscesses, containing from two to three ounces of thick healthy pus, the rest of the structure of the organ being normal. The gall-bladder contained about two quarts of thick yellow puriform matter, mixed with shreds of lymph, and tinged with bile. The orifice of the cystic duct was completely occluded by layers of false membrane.

The reporter regards as probable the existence, from the commencement, of inflammation of the gall-bladder. The absence of local œdema and redness led him to doubt the existence of hepatic abscess. A cancerous aspect of the patient at one time led to the opinion that the tumor might be a medullary sarcoma of the liver. This, however, was shortly disproved by the fluctuation, and the absence of the bossilated feel which that disease generally presents.

In case No. 2 there existed cancer of the gall-bladder and pancreas. The patient was a female, aged fifty, who had been subject for several months to severe epigastric pains, with vomiting of green bilious matter. There was considerable emaciation, with the straw-colored tint characteristic of the cancerous diathesis. In the right hypochondriac region, and about midway between the umbilicus and the margin of the ribs, there was an immovable and indurated tumor, apparently about the size of the fist, and more or less tender under pressure.

On inspection after death, the gall-bladder was found to be converted into an indurated mass at least four inches long and an inch and a half thick, its increased dimensions depending upon a scirrhous degeneration of its walls. The liver was healthy. The head of the pancreas was enlarged and exceedingly firm, cutting like cartilage, but the rest of the gland appeared healthy.

In case No. 3, scirrhus of the pylorus was simulated by a gall-stone of unusual dimensions. The patient, a merchant, aged forty-five, had also chronic pleurisy affecting the right side. "About two inches to the right of the middle line, and an inch and a half below the margin of the ribs, there was an oblong tumor, deep-seated in the abdomen, but which could be readily grasped between the fingers when the abdominal muscles were relaxed; besides which there were several other indurated masses, which could be distinctly traced, owing to the attenuated condition of the abdominal parietes. These latter appeared to occupy the small intestine, and closely resembled fecal accumulations."

On inspection after death, "the tumor felt during life proved to be a large gall-stone, completely filling the bladder and moulded to its shape. Several of the convolutions of the small intestine were agglutinated, while their parietes at these points were greatly thickened and evidently in a scirrhous condition.

In case No. 4 a gall-stone obstructed the pancreatic duct, causing extensive disease of the pancreas. The patient, a married lady, aged forty-five, exceedingly obese, was seized, in October, with severe pains in the epigastric region, lasting for several days, and attended by jaundice. In a few days the pain returned with increased intensity; she became delirious, the pulse frequent, the abdomen distended and tender, and death took place in sixteen hours from the commencement of the second seizure. The liver was large and fatty; the common duct greatly enlarged, filled with bile, and its orifice obstructed by a gall-stone of the size of a small cherry, which also completely closed the pancreatic duct. The pancreas was three times its natural size; it was soft and livid, but without gangrenous odor. Peritoneum not inflamed.

In this case there was no fatty matter in the dejections during life.

In the foregoing account, the reports of the cases are greatly condensed. The remarks appended by the writer to each of the cases possess much interest. (*American Journal of the Medical Sciences*, January, p. 13.)

Mercurial Muco-Enteritis. By WM. H. BYFORD, M.D., of Evansville, Indiana.

Dr. Byford regards, as the most constant evidence of the constitutional effect of mercury, inflammation of the mucous membrane of some portion of the alimentary tube—the most frequent site of the specific inflammation being the mouth, but not always or exclusively. The irritation of the bowels so often produced before the gums are "touched," Dr. Byford is led to attribute, from careful and extended observation, to a specific mucous inflammation. The super-secretion from the liver he refers to the same condition, the function of this organ being excited just as salivation and enlargement of the salivary glands are due to the stomatitis induced by mercury. He gives two cases in illustration of these views, and sums up his conclusions in the following terms: "The specific acute inflammation produced by mercury has its site—1st, most frequently in the mouth; 2d, very frequently in the lower portion of the colon and rectum; 3d, not so often in the duodenum; 4th, situated in all these localities, it may be combined with stomatitis or not; 5th, inflammation may be produced in any of these localities either by internal use, by inunction, and probably by fumigation."—(*American Journal of the Medical Sciences*, April, p. 313.)

DISEASES AFFECTING THE RESPIRATORY SYSTEM.

Cases of Pneumonia.—Thirteen cases of pneumonia, treated at the Bellevue Hospital, New York, are reported by GEO. S. HARDAWAY, M.D., resident-physician. The treatment consisted of dry and wet cupping; small doses of antimony in some cases; the oiled-silk jacket, and generally the pretty free use of opium, stimulants, and tonics, with a sustaining diet.

The reporter appends the following summary:—

"Number of cases reported		13
" " recoveries		11
" " deaths		2
Per centage of mortality		15·4
Average duration of disease until complete recovery .	days	30·2
" " of those who died	"	19
" " till convalesence began . . .	"	16·7
" " of convalescence	"	13·4

"Of the two fatal cases, in one gangrene of the lung occurred, and hemorrhage; in the other instance the pneumonia was double, and accompanied by general bronchitis. Of the cases in which recovery took place, in one the pneumonia was double, and in one it was complicated with delirium tremens."—(*Nashville Journal of Medicine and Surgery*, Sept., p. 173.)

DR. NICHOLS gives the course, termination, and treatment in eleven cases received at the Buffalo Hospital of the Sisters of Charity, service of Dr. Flint. All the patients were adult males, the youngest being nineteen, and the oldest thirty-six years of age. In two cases tuberculosis was supposed to coexist, and in one the patient had lately had an attack of intermittent fever; the remaining eight cases were uncomplicated. All the cases ended in recovery, with a single exception, in which pericarditis supervened while the pneumonia appeared to be progressing favorably.

The treatment generally consisted of opium, sulphate of quinia, brandy, and nutritious diet. Bleeding, general or local, was not employed in any instance; and tartar emetic in one case only.

Three cases are given in detail, illustrating marked improvement under the use of full doses of opium. In case No. 1, opium, grs. ii. every six hours, with a little ale, was prescribed, the assemblage of symptoms being as follows:—"An aspect of anxiety and prostration; the respirations 42; dilation of alæ nasi; pulse 120, quick and vibratory; tongue thinly coated, dry and swelled at its extremity; sordes on the teeth; expectoration tenacious, not opaque, not abundant, presenting a reddish-yellow color, pretty uniformly diffused." The whole right lung was affected. The day following, the record runs thus:—"Aspect greatly improved; pulse 104, more volume and free; respirations 26." The next day improvement was more marked: pulse 80; respirations 28, and not labored. Convalesence followed.

In case No. 2, the entire right lung was affected. The patient had been confined to the bed twelve days, and presented on his admission the following symptoms:—pulse 140; skin warm; tongue thickly coated; respirations 36. He was addicted to drinking. The treatment was, sulphate of quinia, grs. v., opium, grs. ii., every four hours; brandy, half an ounce every four hours, and sustaining diet. The day following the aspect was greatly improved. He had passed a quiet night; pulse 120; respirations 32. The next day the improvement was still more marked. The pulse was 100, and the respirations 26. Convalescence was speedily declared.

In case No. 3, pnuemonia was developed in the hospital, the patient presenting, when admitted, subacute laryngitis, and an eruption of ecthyma over the body. He was attacked with inflammation of the lower lobe of the right, and subsequently of the lower lobe of the left lung. He was treated with the sulphate of morphia, gr. ¼, at first every six, and afterward every four hours. This, with whisky, half an ounce every three hours for several days, and sustaining diet, constituted the treatment. Convalesence was established on the sixth day.—(*Buffalo Medical Journal*, Nov., p. 337.)

Treatment of Pneumonia. By C. I. POPE, M.D., of Eufaula, Alabama.

Dr. Pope attaches much importance to the use of opium in the treatment of pneumonia, bleeding, in some cases, being premised. He conjoins to the opium, calomel, and also employs the veratrum viride.—(*North-American Medico-Chirurgical Review*, July, p. 602.)

On the Value of the Red Line of the Gums in the Diagnosis of Phthisis. By D. D. SAUNDERS, M.D., and JOHN C. DRAPER, M.D., Bellevue Hospital, New York.

Dr. Theophilus Thomson, in a late work on pulmonary consumption, attaches considerable diagnostic importance to the presence of a red line at the reflected edge of the gums, especially round the incisor teeth. Drs. Saunders and Draper have undertaken to test the utility of this red line as an element in the diagnosis of phthisis. For this end, they examined all the patients under treatment in the wards of Bellevue Hospital. The results are expressed in the following tables:—

Table No. 1 is intended to show the frequency of its occurrence, without regard to the disease. The terms used at the head of the table are, *no line, slight, good,* and *excellent.* The first is used when no trace of a line exists; *slight* is used when the line is faintly marked on three or four gums; *good* is used when the line is pretty well marked on the gums of the upper jaw; *excellent* is used when the line is full, plain, and very marked on all of the gums.

The whole number of cases examined, (four hundred and fifty-one,) in whom the red line existed, is as follows:—

TABLE NO. I.

No. of cases.	No line.	Slight.	Good.	Excellent.
451	106	96	175	74

"Table No. 2 comprises one hundred and sixteen cases of phthisis, in all its stages. Under the head of stages, the numbers 1, 2, 3, are intended to denote the divisions commonly used in describing this disease.

TABLE NO. II.

Stages.	No. of Cases.	No line.	Slight.	Good.	Excellent.
1	26	7	3	9	7
2	21	4	5	8	4
3	69	17	17	21	14
Total	116	28	25	38	25

"From this we find one-fourth of the cases have no line, another fourth have it very slightly developed, leaving one-half in which it is plainly marked. It may also be observed that the stage in which the disease exists does not have any material influence on the line. Table No. 3 comprises all varieties of disease except phthisis.

TABLE NO. III.

No. of cases.	No line.	Slight.	Good.	Excellent.
335	78	71	137	49

"In this table we find more than three-quarters of the cases have the line more or less developed, though only a little more than one-half have it well shown. This table would rather leave the impression that this line occurs in most chronic diseases, as stated by Drs. Thompson and Frederick, oftener than in any other condition, though the following table conflicts with that opinion. Table No. 4 comprises thirty-seven cases of pregnant and recently delivered women, in whom no pathological lesion existed.

TABLE NO. IV.

No. of cases.	No line.	Slight.	Good.	Excellent.
37	5	6	11	15

"In the thirty-seven cases, we see the line existing in thirty-two, though only slightly in six. The results of this table deserve some consideration, as it has been stated by most authors who have investigated the subject that the line is peculiar to chronic blood diseases; this view, however, is not sustained by the above table, as no disease existed in any of the thirty-seven. It should be remarked, also, that the line occurs more frequently and is better marked in the pregnant woman than in any cases examined. The number of cases at our command will not justify a conclusion; yet they may serve as a basis of further investigation. The question might be asked—May not this line be considered in connection with the other symptoms of pregnancy?

"Table No. 5 comprises thirty-two cases of uterine disease, and is intended to show the difference between the physiological and pathological conditions of the uterus.

TABLE NO. V.

No. of cases.	No line.	Slight.	Good.	Excellent.
32	14	7	10	1

"In the thirty-two cases examined, there were nearly one-half where the line did not exist, and only one-third in whom it was pretty well marked. It may be observed that there is considerable difference between tables No. 4 and 5, the line occurring nearly in an increased ratio in the two conditions of the uterus, being only very well marked in a single instance when the organ is diseased.

"Table No. 6 is intended to demonstrate the influence of sex on the line.

TABLE NO. VI.

	No. of cases.	No line.	Slight.	Good.	Excellent.
Female . . .	234	57	55	80	42
Male	217	49	41	95	32

"From this we see no marked difference in the frequency of its recurrence in the different sexes.

"Table No. 7 shows the influence of age.

TABLE NO. VII.

Age.	No. of cases.	No line.	Slight.	Good.	Excellent.
Below 20	48	21	9	10	8
20 to 30	185	38	37	80	30
30 to 60	199	42	44	78	35
Above 60	19	5	6	7	1
Total,	451	106	96	175	74

"Age exerts no influence on the occurrence of the line.

"The following general conclusions may be drawn from the above statistics:—

"1. The red line, though it occurs frequently in phthisis and chronic blood diseases, is by no means characteristic of them.

"2. In pregnant and recently delivered women, the line occurs more frequently and better marked than in any cases examined, and may, perhaps, deserve consideration in connection with that condition.

"3. That age or sex exercise no influence on the existence of the line."—(*New York Journal of Medicine*, January, p. 62.)

On the Precursory Stage of Phthisis. By L. M. LAWSON, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, in the Medical College of Ohio.

Professor Lawson defines the precursory stage of phthisis to be that which immediately precedes the tubercular deposit. It is "the beginning of a positive morbid action, which, if not arrested, surely and steadily progresses to the local deposit of tubercle."

He regards certain symptoms and signs as characteristic of this stage. It is marked by debility, loss of weight, impaired calorific power, variable digestion, with occasional chills and consequent febrile reaction. He thinks that in a large majority of cases passing into consumption, the pharyngo-laryngeal mucous membrane becomes early diseased, exhibiting a diffused redness, extending over the pharynx, involving more or less the uvula and soft palate, on the one hand, and dipping into the larynx, on the other. The cough and sputa are usually trivial, and are dependent, in most instances, on the throat affection. As regards a throat affection such as he describes, Professor Lawson differs from other observers, who have found its occurrence rare, except as secondary to the tubercular deposit. Hemorrhage, he thinks, may occur anterior to the deposit of tubercle, and thus, in some instances, belongs among the symptoms of the precursory stage.

The physical signs, although less marked, he regards as not less characteristic than those which supervene upon the deposit of tubercle. He enumerates the following:—Limited expansion of the chest, extending equally to both sides. Reduction of the vital capacity of the chest, denoted by the spirometer, or the common tape-measure. Diffused dullness on percussion, removed by forcible inspiration, and the parietes of the chest rigid and resisting. Weakness of the respiratory murmur, and jerking inspiration—the weakness extending to every part of the chest.

The author remarks, in conclusion, "Many will doubt the correctness of the preceding views; but my own observations have been sufficient to convince me of their truth, and that they may be readily recognized by the careful observer. All must agree that this stage is the most important in regard to therapeutics."—(*Western Lancet*, October, p. 707.)

Hæmoptysis, as it prevailed in Little Rock, Arkansas, in December, 1855, *and January and February*, 1856. By C. McAlmont, M.D.

Forty or fifty instances of hæmoptysis occurred in Little Rock during the three months above mentioned. This symptom is not of common occurrence in that situation. Tubercular affections are rarely met with, but pneumonia is frequent during the winter months.

The following is the description given by the writer:—

"The symptoms preceding and following the attack were not uniform. In some cases it came on suddenly and without previous warning, but more generally it was preceded by cold extremities and chilly sensations, loss of appetite, headache, and slight debility, with feelings of oppression. These symptoms were followed by some fever, and were either remittent or intermittent in character, lasting from one to six or eight days before the hemorrhage took place. The hemorrhage was attended and preceded by cold extremities and chilly sensations; the pulse feeble and small, beating from ninety to one hundred strokes per minute. As the hemorrhage advanced, and in proportion to the quantity of blood lost, the pulse sank and became more rapid and feeble, the body growing cold and covered with perspiration. These symptoms lasted from one to twelve hours, according to the treatment and severity of the attack. The first indications of improvement were increased strength and fullness of the pulse, followed by warmth of body and extremities, the hemorrhage growing less until it had entirely ceased, or nearly so. The reaction, in some cases, was very violent, but generally feeble. As the symptoms preceding the hemorrhage were remittent or intermittent, so was the hemorrhage with its attending symptoms; and you might look for a recurrence of the hemorrhage in one, two, or three days, if intermittent, unless cut short by treatment, and from four to six hours, if remittent, the hemorrhage never ceasing entirely until there had been several exacerbations and remissions. The hemorrhage was of a passive character, but sometimes it continued after reaction had fully taken place, and became active. This only occurred in two or three cases. The prostration following these hemorrhages was not, in general, as great as might have been expected, from the quantity of blood lost, which was great in some cases; but more often the quantity was small, ranging from two to sixteen ounces. The tongue was always more or less furred, sometimes white; more often yellow or brown. The bowels were generally costive, and showing a want of bilious secretion; the countenance *sallow;* eyes dull and surrounded with a blue circle, and, in some cases, became tinged with bile. The thirst was very great, and frequently attended with nausea and vomiting; the blood was florid and frothy; the cough attending these attacks was sometimes considerable, at other times slight, accompanied with more or less pain and tickling sensations; auscultation revealed sibilant and sonorous rattles; when the blood was in the air-passages and at points where there was dullness on percussion, (which only existed in a few cases,) there was no respiratory murmur, and in its place a crepitant rattle.

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"The treatment adopted and most successful was large doses of opium and quinine, from one to three grains of the former and five to twenty of the latter, repeated in four or eight hours if necessary. Strong revulsive remedies were applied to the chest, stomach, back, and extremities; mustard plasters were generally used for this purpose; the bowels to be opened with calomel or the compound cathartic pill, the calomel to be continued in alternate doses, if indicated by want of bilious secretion and torpidity of the bowels. If the symptoms continued bad, blisters were applied to the chest and extremities. When the hemorrhage continued after reaction had fully taken place, and the pulse full and strong, venesection was resorted to, with the internal use of acid drinks, ice, and astringents. Acetate of lead is the best astringent, and was generally used, some preferring gallic acid."—(*North-Western Medical and Surgical Journal,* August, p. 343.)

Paracentesis Thoracis in cases of Pleurisy. By HENRY I. BOWDITCH, M.D.

The profession are familiar with the views and practice of Dr. Bowditch, in cases of pleurisy, from his articles on the subject in the *American Journal of Medical Sciences,* April, 1852, and in the *American Medical Monthly,* N. Y., January, 1854. The *Boston Medical and Surgical Journal,* June 4th, contains another article by Dr. Bowditch, giving the results of sixty-one operations, in thirty-seven cases, performed since the publication of his previous articles. In every instance but one, marked relief followed the operation. In the excepted case, the person was very intemperate in her habits, and was stupid with liquor when the chest was punctured; but the dyspnœa was so very great as to threaten immediate death. This patient was relieved temporarily, but sank in about twenty-four hours after the operation. In no other instance was there any untoward result. He gives the details of some (nine) of the more interesting of his recent cases.

Dr. Bowditch states that further experience has served to confirm him more than ever in "the belief of the importance of this operation as a remedial measure, to be used *not as a last resource*, but like any other simple remedy, if necessary, at any period of the disease." He sums up his experience as follows: "Since April 17th, 1850, I have operated upon sixty-two individuals, of both sexes and of all ages. I have punctured one hundred and eleven times. I know of nothing in practical medicine which has afforded me more satisfaction than this simple operation. I use designedly the expression practical *medicine*, in contra-distinction to surgery. The perfect simplicity of the operation, to one satisfied of the correctness of his diagnosis, allies it to venesection or vaccination. It is, 1st, as a general rule, less painful than a blister; 2d, it *never* does harm, if I may judge from my cases; 3d, when fluid is obtained it *always* gives relief, either temporary or permanent; 4th, very often it is the chief, if not the sole means capable of relieving severe symptoms, and even of saving life."

Dr. Bowditch adds, that he still uses the exploring trocar, although in some instances, where there has been a tendency to a re-accumulation of fluid, he has used a larger instrument.

In the *Boston Medical and Surgical Journal*, Sept. 24th, Dr. Bowditch states that he has recently resorted to paracentesis in two cases of *hydro-pneumothorax*. In both cases it had been followed by relief, and no unpleasant consequences.

Lesions of the Epiglottic Cartilage. By HORACE GREEN, M.D., L.L.D., etc.

Dr. Green has found the epiglottis to be the seat of erosions or abrasions of its mucous membrane, ulcerations of its membrane and of its glands, and œdema, much more frequently than has been supposed to be the case, exclusive of the lesions proper to phthisis as described by Louis and others. He has observed these structural alterations occurring as primary and independent affections, so far as tubercular disease is concerned; but they are complicated, in some cases, with similar lesions of the tonsils, fauces, and pharynx, and are occasionally associated with tuberculosis.

According to Dr. Green's experience, these lesions, unascertained and not suspected by the practitioner, may perpetuate indefinitely cough and expectoration, not dependent on pulmonary disease, and these symptoms are often at once relieved on discovering the morbid condition of the epiglottis and resorting to topical medication. He cites several cases in illustration of this position. To show the relative frequency of the occurrence of epiglottic lesion, he gives the following statistics:—Of four hundred and two patients affected with some form of disease of the respiratory passages, who were examined and treated between the first of May, 1856, and the 30th of April, 1857, there were found thirty-four instances of well-marked *erosions* of the epiglottis. Of this number twenty-one cases occurred in males, and thirteen in females. In upward of twenty of the above cases these lesions existed entirely independent of tubercular disease. The number of cases of ulcerations (as distinguished from *erosions*) of the epiglottis, which occurred among the four hundred and two patients, amounted to twenty-six, as estimated by Dr. Richards, the assistant of Dr. Green. About one-third of this number were females. Dr. Green, however, is of opinion that a part of these cases were more properly to be classed under the head of *erosions*. He thinks that *erosions* occur with four-fold more frequency than *ulcerations*. He states that it is difficult to give the proportion of patients affected with *œdema* of the epiglottis, for in most instances of ulceration, and in many cases of long-continued *erosion*, more or less œdema was found to be present. Dr. Richards has recorded twenty-nine cases of this lesion among the four hundred and two patients to whom reference has been made. Eight only of the twenty-nine were females.

The principal propositions embodied in the paper are summed up in the following conclusions:—

"1. The epiglottic cartilage is subject to serious alterations of structure, which, it is believed, have not received that attention in practical medicine which their importance demands. These lesions, which are ordinarily the result of inflammation, are *erosions* of the mucous membrane of the epiglottis. *Ulcerations* of the membrane and of its glands; and *œdema* or *infiltration* of its areolar tissue.

"2. Both erosions and ulcerations, although occasionally found associated with tuberculosis, yet are often found to exist as primary disease, being the antecedents, and, in many instances, the exciting cause of other grave affections.

"3. Erosions occur much more frequently than ulcerations; they differ from the latter in being more superficial, as they are confined to the mucous membrane, and ordinarily to its epithelial layer.

"4. Primary ulcerations of the epiglottis are alterations of structure, differing essentially, as we have seen, from the erosions of this organ. They originate apparently in the follicles of the mucous membrane, which soften, ulcerate, and, penetrating the fibro-cartilage, destroy, ultimately, a portion of the epiglottis, and if not arrested prove the cause of still more serious disease.

"5. Œdema of the epiglottis, or infiltration of its areolar tissue, is a lesion of this cartilage of somewhat frequent occurrence—the result, ordinarily, of catarrhal inflammation. It is attended, generally, with loss of voice, difficulty of deglutition, and is occasionally complicated with ulcerations of this cartilage, by which, in some instances, the epiglottis has been completely destroyed.

"6. The epiglottis, which is almost insensible in its normal state, becomes, when diseased, frequently the source of great irritation to the more sensitive adjacent parts. The presence of this cartilage is not indispensably necessary to insure deglutition, as deglutition may be performed in the absence of this organ. It is necessary, however, to render perfect this act; but its most important function is to cover over and protect that exquisitely sensitive portion of mucous membrane which occupies the supra-glottic space, and which is the true sentinel at the glottic opening.

"But the most important practical conclusion is found in these propositions, that some of the lesions which have now been described are often, it is believed, not only among the earliest manifestations of thoracic diseases, but are themselves, in many instances, the *true exciting cause* of these affections; and furthermore, this postulate once established, that we have it in our power, by timely topical medication, to arrest positively causes of disease which otherwise would, and in many instances do, terminate fatally."—(*American Medical Monthly*, October, p. 201.)

Fistula in Ano, in its Relation to Pulmonary Tuberculosis.

By P. H. STRONG, M.D.

Dr. Strong embodies in the following formula the doctrine generally held with regard to this subject:—"The relations of fistula in ano to pulmonary tuberculosis are such, that its presence, either as antecedent to or coexistent with the latter, is a desideratum, and to be sedulously cherished, having reference to its (pulmonary tuberculosis) prevention in the one case, and to its cure or favorable modification in the other."

Dr. Strong argues against the correctness of this doctrine, *first*, that it is based mainly on the belief of a revellent influence being exerted by the fistula, while an enlightened pathology and clinical observation teach that such an influence is of little or no value in preventing or retarding the progress of pulmonary tuberculosis; *second*, other and kindred affections, scirrhus and melanosis, depending alike on a blood dyscrasy, are not affected generally by revellent or derivant discharges; *third*, the doctrine originated when erroneous views prevailed respecting the causes, nature, and management of tubercular affections.

Conceding that tubercular matter is discharged, as it were vicariously, by means of the fistula, he contends that the proper object for therapeutics in this affection is not to eliminate the material, but to remedy the dyscrasy, by removing the conditions on which it depends.—(*Buffalo Med. Journal*, February, p. 541.)

Hygienic Influences in Preventing and Arresting the Progress of Pulmonary Tuberculosis.

Dr. Samuel A. Cartwright, of New Orleans, testifies, from his experience, to the effect of active out-door pursuits in removing the tubercular diathesis and cachexia. He attributes this effect mainly to the intimate connection between respiration and assimilation, regarding the activity of the former as the first link in the chain of influences derived from exercise. To be efficient, exercise must be involved in pursuits which interest the mind as well as occupy the muscles, and hence he remarks, "psychical influences, after all, are the most to be depended upon in the treatment and prevention of consumption."—(*New Orleans Med. and Surg. Journal*, November, p. 289.)

Dr. R. E. Haughton, M.D., of Richmond, Indiana, writing on the same subject, gives similar testimony to the value of hygienic influences, which he states to have been effectual in arresting the progress of pulmonary tuberculosis in his own person.—(*Nashville Journal of Medicine and Surgery*, May, p. 353.)

Influences of Atmospherical Changes in Determining the Recurrence of Paroxysms of Asthma.

Dr. A. W. Nichols has presented, in a tabular form, the successive paroxysms of asthma occurring in a case under observation at the Buffalo Hospital of the Sisters of Charity, in the service of Dr. Flint, from December 3d to February 17th. During this period seventeen paroxysms occurred. The date of each paroxysm; the time of the day when it took place; the degree of severity, duration, remedies employed, and the apparent effect, as well as the state of the weather, are noted in the table referred to. The paroxysms generally came on during the night or early in the morning. They did not observe any rule of periodicity. They were variable as regards intensity, and were usually much more severe after any decided change in the atmosphere. Almost all of the variations in the weather were from a cold and dry to a warmer and moister atmosphere. It is also to be noticed that no paroxysms occurred after or during certain decided atmospheric changes, as great as those which, at other times, were followed or accompanied by asthmatic attacks. The paroxysms, even when most severe, and when not influenced by remedial agents, did not continue longer than twenty hours. The inhalation of chloroform produced more marked relief than any other measure employed. The paroxysms were apparently abridged by it; the difficulty of breathing was diminished; the patient was able to assume the recumbent posture, and natural sleep soon succeeded. This was the result in six paroxysms in which it was tried. The dry bronchial râles were diminished in a few minutes after breathing chloroform.—(*Buffalo Medical Journal*, June, p. 6.)

Influence of Pregnancy on the Development of Tubercles. By EDWARD WARREN, M.D., of Edenton, North Carolina.

This subject is discussed by Dr. Warren in an essay to which was awarded the Fiske fund prize, June, 1856. The essay was published by request of the Rhode Island Medical Society. The author divides the investigation into three heads, thus:—1. A consideration of the tubercular diathesis. 2. An inquiry into the nature of tubercle. 3. An application of rules respecting disease already established. In view of the length of the essay, and the limits to which this review must be restricted, we can only present a summary of the several points of the argument by which the author endeavors to prove that pregnancy prevents the progress of phthisis even when fully developed.

"(1.) There is an inequality in the relations which men and women sustain to phthisis; the former being less liable to it than the latter.

"(2.) This inequality depends upon certain differences of conformation, etc., which are *plain, palpable, and conspicuous.*

"(3.) An examination of phthisical statistics should show that more women fall victims than men, and that the difference in the relative mortality of the two is as *plain, palpable, and conspicuous*, as their original dissimilarity of constitution and predisposition.

"(4.) An examination of statistics proves, that *it is not* a settled *fact* that more females are destroyed by this malady, and that there is a positive approximation toward *equality* in the effects of phthisis upon the two sexes.

"(5.) This 'approximation toward equality' shows the operation of some great equalizing cause, by which a certain amount of protection is secured to the female system that makes up for its greater original susceptibility, and affects the general result in the manner alluded to above.

"(6.) Pregnancy complies with *all* the conditions which this cause demands for its operation, and it is fair to attribute this protecting, preventing, and equalizing effect to its influence upon the female system."—(*American Jour. of Med. Sciences*, July, p. 87.)

On the Effects of Climate on Tuberculous Disease. By EDWIN LEE, M.R.C.S., London.

To this dissertation the Fiske fund prize was awarded, June, 1855; and it is published by request of the Rhode Island Medical Society. The author, after some preliminary remarks, considers—1st. The nature of pulmonary tuberculization. 2d. The causes of pulmonary consumption. 3d. The effect of climate on tubercular consumption; and 4th, he submits the conclusions at which he arrives. An appendix is devoted to notices of some of the places most frequented, on account of their climates, in the south of France, Italy, etc.

From the series of conclusions, which are too extended to be quoted entire, we select the points possessing most practical importance, expressing them in terms as concise as possible.

Pulmonary tuberculosis is curable in an indefinite proportion of cases, and the proportion would be increased by the more general employment of climate together with other hygienic and remedial means, now resorted to in exceptional cases only, and frequently when the disease has arrived at a stage too advanced to derive permanent amelioration from the use of any means. The formation of tubercle depends, most probably, upon an impoverishment of the blood, characterized more especially by a diminution of the normal amount of its globules, together with an alteration in its composition, occasioned chiefly by deficient activity of the skin. Statistics show that pulmonary consumption occurs more frequently in countries and localities where a humid state of the atmosphere predominates, and among classes of the population most exposed to this and other influences, which tend to depress the vital powers; and, on the other hand, tuberculous diseases are comparatively rare in cold and dry climates, and in warm and dry countries, while they are frequent in countries where the climate is moist and hot.

The chief indications in the treatment are, to remedy the morbid condition of the blood, in order to prevent or avert the morbid deposit, and to allay the general and local excitation occasioned by the organic lesion. The first of these indications is best fulfilled by change of air, and a residence, more or less prolonged, in warm countries during the winter. The beneficial influence of climate is more marked in proportion as the disease is recent. The localities best suited for the winter residence are those which, together with a suitable climate, possess resources for mental occupation and diversion, inducing patients to pass a great portion of their time in the open air. The selection of climate is to be determined by the particular circumstances in individual cases. In general, warm and dry localities best suit persons of a lymphatic or scrofulous constitution, in whom the circulation is languid; these are, on the other hand, often too exciting for individuals of a sanguine or nervous temperament, in whom there is irritability of the air-passages, a disposition to inflammation, or to hæmoptysis with acceleration of the circulation. Patients of the latter class would more frequently find themselves better where the atmosphere is somewhat moist, not liable to great transitions, and of which the action is consequently sedative. A similar climate is better adapted to patients in the more advanced stages of the disease.

Among the climates most in repute for their efficacy in retarding the progress of pulmonary consumption, there exists a considerable variety with respect to equality of temperature, the state of dryness or moisture, degree of warmth, etc. The climates of Upper Egypt and the southeastern coast of Spain are the most remarkable for their warmth and equability in winter, as well as for the dryness of their atmosphere. To these climates, Hyères, Nice, Menton, Malta, and Naples approximate nearest as respects dryness, though differing materially in other respects. The West India Islands and Cuba may be mentioned as types of hot and moist climates. Among the intermediate climates, characterized by variable degrees of warmth, equability, and humidity, are Madeira, Algiers, Pau, Pisa, Rome. The three latter have a sedative action, often depressing the vital powers of persons in health, as well as of many invalids.—(*American Journal of Med. Sciences*, April, p. 337.)

Case of Pneumo-Thorax. Reported by A. W. NICHOLS, M.D.

This case exemplifies an extremely rare form of disease, viz. the presence of air in considerable quantity within the pleural sac, the evidence of liquid effusion being entirely wanting. It occurred suddenly, during muscular exertion, the patient supposing himself to be free from any disease. It seemed most rational to attribute the occurrence to the rupture of a pleural emphysematous bleb. The details of the case are of interest with reference to the presence of air in this serous cavity for several weeks without inducing other effects than those incident to compression of the lung on the affected side; and also, as presenting the physical signs significant of the presence of air without liquid effusion in the pleural sac.—(*Buffalo Med. Journal*, April, p. 673.)

MISCELLANEOUS.

Report on Infant Mortality in Large Cities, the Sources of its Increase, and Means for its Diminution. By D. MEREDITH REESE, M.D., LL.D., etc., of New York.

This report was made, by appointment, to the American Medical Association, May, 1857. It appears from the official bills of mortality that nearly one-half of the whole number of deaths, especially in large cities, occur in infancy, and under the age of five years. In the city of New York the whole mortality of the last half century amounted to 363,242, (including the still-born,) while the number of deaths under five years of age are 176,043, which is nearly 49 per cent. of the entire mortality of the city. It appears, moreover, that the infant mortality in the city of New York is fearfully on the increase. In the year 1853, the deaths under five years numbered 12,963, while in 1843 only 4588 such deaths occurred, showing the appalling increase of 8375 within ten years, which is vastly beyond the proportioned increase of the population of the city during the decennial period, as shown by the census. This increased infant mortality in 1853, as compared with 1843, is in a ratio very far beyond that of the aggregate of the deaths in persons of all ages. The deaths under five years, in 1853, were 12,963, while the deaths of all others in the city, of every age, numbered only 9739; so that the infant mortality exceeded all the other interments for that year by 3224! These facts are derived by the author from "a table of mortality in the city of New York for the fifty years between 1804 and 1853 inclusive," annexed to the report.

The statistics of Drs. Emerson and Condie, of Philadelphia, Dr. Lee, and others, show also the enormous extent of infant mortality, and its amazing increase,—the latter being a fact peculiar to our American cities, for in the great cities of the Old World the mortality of infancy has been annually diminishing for many years. The number of interments recorded as still-born, or premature births, and the increase of this number, are worthy of note. In 1843, 760 of this class were recorded, and in 1853, no less than 1930,—an increase of 1170, which is nearly 140 per cent. of increase within ten years!

In investigating the causes of this large number of cases of still-born, or premature births, the author regards it as clear that it is not to be accounted for by hereditary and constitutional vitiation of blood in either parent; contingent morbid agents, acting upon the body or mind of the mother; and incidental or accidental events occurring during pregnancy and parturition. The proportion of cases not due to these well-known causes, he thinks, may fairly be attributed to the crime of abortionism.

The dangers to life attendant upon early infancy, Dr. Reese classifies as follows:—1st. Defective vitality at birth, hereditarily transmitted from one or both parents, whereby the infant is not viable, and perishes from inanition. 2d. Mismanagement of infancy by parents, nurses, or doctors, in feeding and physicking the newly-born; depriving them of their natural nourishment, and substituting therefor the thousand slops, teas, etc., which officious grannies of both genders are wont to prepare and administer. 3d. Deficient light, pure air, ventilation, cleanliness, clothing, fuel, and wholesome food, incident especially to cities, as compared with country towns or rural districts. 4th. Illegitimate systems of practice, or quackery in its varied forms.

The means by which infant mortality is to be diminished the author considers under the following heads:—1st. Marriages should not be permitted until the parties have been subjected to professional scrutiny. Improper alliances should be prohibited by law. 2d. Foundling hospitals and lying-in asylums should be provided by the State, in order to remove the temptations to the crime of abortionism. 3d. The law should require the erection of dwellings for the poor, in accordance with the laws of health and life; and in all cities a sanitary medical police should be established to see that this law is enforced. 4th. Hospitals for sick children should be established and properly endowed. 5th. Provisions should be made and enforced against the selling of impure or adulterated milk and other unwholesome articles of food.—(*Transactions of American Medical Association*, vol. x. 1857.)

Addison's Disease of the Supra-Renal Capsules. By DR. GOULD.

At a meeting of the Boston Society for Medical Improvement, May, 1857, Dr. Gould reported a case of the above disease, which had recently fallen under his observation at the Massachusetts General Hospital, being the first case, within his knowledge, that had been recognized in his vicinity.

The patient was a farmer, aged forty-four, who came to Boston as a passenger in an Eastern steamboat, on his way to the West, for his health. He had been a man of great energy, strength, and endurance; rigidly temperate. Eight years before, he had pneumonia, leaving him with cough and copious expectoration, which kept him from work about three years, and at the end of this time he had a series of boils at the epigastric region, and also a large abscess in the thyroid region, which for two weeks filled and discharged every forty-eight hours. For the next four years he had excellent health. During the last year his health had been failing. He had loss of appetite, flesh, and strength, with frequent attacks of nausea and vomiting; pain in the abdomen on stooping, with an irregular state of the bowels; coldness, rigidity, and insensibility in the fingers of both hands, lasting perhaps an hour; dizziness, listlessness, and loss of memory. Nothing unusual was noticed in the urinary function. A change in the complexion had existed for eight months. It was described as of a bluish cast, and at times almost purple. For several weeks discoloration within the mouth had been observed.

During the voyage to Boston he was very sea-sick, but had walked about the cabin in the morning. He was afterward found lying insensible in his berth, and was brought to the hospital in that condition. His appearance was that of a stout, vigorous man. He lay on his back quite insensible, breathing at irregular intervals; hiccoughing, unable to swallow; eyelids firmly closed, and the pupils contracted; action of heart rapid and feeble; pulse weak, uncertain, and sometimes imperceptible; hands cold, and fingers rigidly flexed. The skin had a peculiar, dark hue, so that one person supposed that he might have had a mixture of negro and Indian blood, while another suggested his resemblance to an unwashed collier or stoker. Within the mouth, bordering the lips, was a circle of dark spots, not livid, but apparently old discolorations. The cheeks were especially dark and lustrous, and the term *bronzed* would aptly designate their appearance. The features sufficiently indicated that the peculiar hue was not due to cold; and its presence on the feet and under the clothes showed that it was not due to exposure. He died six hours after his admission.

Sectio Cadaveris. By DR. C. ELLIS.—"In the substance of the brain, between the lateral ventricle and longitudinal fissure, was a firm, bluish-white nodule, containing considerable cretaceous matter. On microscopic examination it was found to consist of fibroid tissue. The pleural surfaces of both sides were everywhere united by old, white, delicate fibrous tissue. The lungs crepitated throughout; in many parts were dark-red spots like ecchymoses. The heart was rather flaccid, containing a large quantity of fluid blood, but no coagula, and there was no coagulation after its removal from the body. The liver was firmly adherent to the diaphragm; its substance normal, and dark-red throughout. The spleen adhered to the diaphragm, and was rather soft. The supra-renal capsules were surrounded by fat, which was separated with difficulty from their external surface. That of the left side was much thicker than usual, very firm, and of a bluish-white color, though much of it was occupied by soft, yellow deposits, resembling tubercular matter or concrete pus. The deposit consisted of minute globules or granular corpuscles, varying in size from those of tubercle to those of pus. The firm bluish-white substance consisted of fibrous tissue. The right capsule was smaller than usual, though thicker at one part, and nowhere flat, as in the normal state. Its appearance, on section, was the same as in the other capsule, but the disease was much less extensive. The other organs were normal.

"Of the symptoms mentioned by Addison, as characteristic of the disease, we have above, from independent and unprejudiced sources, nearly every one. We have bronzed skin, debility with moderate emaciation, anemia, dyspepsia, feeble pulse, nervous twitchings, with numbness, and failure of memory. The other symptoms mentioned by him relate to the tongue, lumbar pain, the urine, (which, so far as known, was normal,) change of temper, and a peculiar odor. With regard to these, the reporters are silent, but not contradictory."—(*Boston Med. and Surg. Jour.*, July 16, p. 480.)

Case of Cirrhosis of the Liver, and Bronzed Skin. By CHARLES FRICKE, M.D., of Baltimore.

An interesting case, entitled as above, is contained in this (Medico-Churургical) Journal, number for July, p. 604.*

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* Analytical notices of the following articles would claim an introduction here, had the articles not appeared in the pages of this Journal. "The Psychology of Acute Rheumatism." By Dr. A. J. WHEELOCK.—(*North American Medico-Churургical Review*, Nov., p. 922.) "On the Influences of Electrical Fluctuations as a Cause of Disease." By S. LITTELL, M.D., Surgeon to Wills Hospital for the Diseases of the Eye and Limb, Philadelphia.—(*Ibid.*, May, p. 390.)

Bi-Monthly Periscope.

PHYSIOLOGY.

1. CIRCULATION OF THE BLOOD AND THE FUNCTIONS OF THE RIGHT AURICLE. By *Thomas Shapter*, *M.D.*, etc.—After a series of careful examinations made upon a man in whom there exists a congenital fissure of the sternum, Dr. Shapter has come to the conclusion "that, as regards the heart, the circulation of the blood is more simply effected than is usually considered to be the case; that, in fact, the heart proper is ventricular, and ventricular only; and that the circulation of the blood through the heart mainly depends upon its ventricular exhaustion and impulsion. The auricle, on the other hand, is rather to be considered as an appendage proper to the venous system, and not as appertaining to the heart; and, without ignoring the influence of the capillaries and of the veins generally, (feeble though this be,) that auricular contraction is not an active agent in the movement of the blood.*

These conclusions I ground on the fact that the whole phenomena witnessed show that the greatest size of the auricle is not induced by a sudden influx of blood from the cavæ,† but on the contraction of the ventricle by the upward pressure of the flaps of the tricuspid valve when propelled into the auriculo-ventricular axis; hence the blood then contained within the auricle is ponded or regurgitated back. The relaxing of the valve and the expansion of the ventricle, whereby the exhausting or suction power of the heart is exercised, immediately relieve the auricle of this undue tension. Its normal condition of a full, but not of an over-distended vessel, is then restored. In this state it continues during its period of rest to receive blood from the cavæ, and to deliver it into the expanding ventricle, till the latter is again filled, and again contracts upon its contents. In the above we see exemplified, as regards the auricle, the phenomena of elasticity rather than those of active muscular contractility, while the ventricle distinctly exemplifies this latter. The normal state of the auricle is that of an open tube containing fluid, and this normal state is disturbed by the hydrostatic force of an increased amount of fluid, but is regained by the elasticity of its coats. Supposing this view to be correct, it is then probable that the musculi pectinati act, firstly, in preventing undue distension, and, secondly, in restoring the auricle to its normal dimensions.

The ordinary explanation of the function of the auricle is that the auricle contracts on the blood contained within it, and propels it into the ventricle. There are two cogent reasons against this conclusion; first, it would assume that the auricle contains blood enough for the supply of the ventricle, which, as is universally admitted, it does not; and, secondly, the absence of any sufficient valvular apparatus at the portal entrance to the auricle, or where the venæ cavæ deliver themselves into the sinus. This alone would militate against the assumption, for not only is it against the whole principle of the circulation, but in fact the contraction of the auricle would as equally force it into the cavæ as into the ventricle.

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* This appears to be also the opinion of Dr. Pavy, who says, "The right auricle never empties itself; indeed, with the exception of the appendix, which is but a very small portion of it, it looks like a large sinus, or a bulging between the two cavæ, with no more power of emptying itself than either of these veins."

† In Cruveilhier's case, the large veins near the heart contracted simultaneously with the auricular systole, and not with its diastole, so that they had no influence in causing its dilatation. The same conclusion may be inferred in the case of M. Groux.

Without discussing what may be the motive power exercised upon the blood in its course through the veins, how much may be due to capillary force, and how much to an elastic or even to a contractile power proper to the veins themselves, I here hazard the opinion that the auricle fulfills two evident conditions, the one, in connection with the venæ cavæ and sinus, of being the ready vessel of supply whence the ventricle, or heart proper, receives the blood it requires; the other, that of being an elastic, expanding vessel, and representing one of those enlargements which invariably accompany the valves of the veins, whereby the blow of the ventricle and the sudden contraction of the valves on the incoming stream of blood are compensated for; and that any muscular power it may exert on the propulsion of the blood is only secondary.—*Med. Times and Gazette*, Dec. 26, 1857.

2. ACTION OF THE PANCREATIC JUICE AND BILE IN THE ABSORPTION OF FAT.—Schiff contests, upon pathological grounds, Bernard's view, that the *pancreatic juice* is the only and indispensable agent for the absorption of fat. He adduces some cases in which a considerable amount of fat was discovered in the body of such who had suffered for a long time from disease of the pancreas. He further shows that there are cases on record in which the excretion of large quantities of fat-like matter with the fæces had taken place without disease of the pancreas.

Regarding the action of *bile* in the absorption of fat, Schiff contends that the bile does not produce any chemical alteration in the fats, and facilitate, through this, the absorption; but that it acts as a stimulant on the contractile elements of the villi; that it causes them to contract and to empty their contents into the lymphatic vessels; that thus room is prepared for the entrance of a fresh quantity of fat into the emptied villi. The author shows by experiment that bile is a stimulus for the muscular fibre, and especially the organic muscular fibre.—*British and Foreign Medico-Chirurgical Review*, Jan. 1858.

SURGERY.

1. ON THE EMPLOYMENT OF COLLODION IN ORCHITIS. By *Dr. Lossetti.*—Having treated sixty-four cases of gonorrhœal orchitis in the Maggiore Hospital, Milan, solely by means of collodion, Dr. Lossetti comes to the following conclusions: 1. Orchitis, epididymitis, or inflammation of the spermatic cord,

even when intense, arising from blennorrhagia, yields much more readily to the application of collodion than to the ordinary antiphlogistic treatment actively employed. 2. The most efficacious means of obtaining certain and rapid recovery is the application of collodion (the author prefers to pure collodion a mixture of one part of castor oil and twenty-four parts of collodion) twice a day, until the cure is completed, applying it oftener, however, in cases of extreme gravity. 3. Under the use of the collodion, the indurations and enlargements which remain after the relief of the inflammatory action will be dispersed without the aid of any other means. 4. By means of its application, the erysipelas of the scrotum that sometimes complicates the orchitis becomes resolved, and the cellular infiltration that almost always accompanies or succeeds it disappears. 5. The treatment required besides, consists only in the observance of a low diet, rest, and cooling drinks. 6. This mode of treatment is more economical than the antiphlogistic mode, by reason of the shorter time it requires, (according to the author's cases, eight days as compared to fourteen by the ordinary treatment,) and the saving of expensive remedies, as leeches, etc. 7. The treatment is also to be preferred, since the digestive organs are not disturbed by active purgation, and the general powers are not enfeebled by this and the abstraction of blood. 8. The sensation of burning produced by the application of the collodion never amounts to the extent of acting as a contra-indication. It becomes violent, and even insupportable, only when some minute lesions of continuity of the skin of the scrotum are present; and these only require to be protected by cerate or court-plaster, to enable the patient to bear the application.—*Omodei Annali Universali. Med. Times and Gazette*, Jan. 16, 1858.

2. RULES RESPECTING THE TREATMENT OF PRIMARY SYPHILIS.—It seems to be now pretty generally acknowledged, in hospital practice, that mercury should be given only in those cases in which the chancre presents marked induration, and that in all others secondary symptoms should be waited for before having recourse to specific treatment. In a large majority of sores not attended by induration, no constitutional phenomena will follow; and to discriminate between those likely to be so followed and the harmless class is admitted to be impossible. There is, therefore, no alternative, except we would give mercury very often unnecessarily, but to wait in these cases until the real nature of the affection shall have been made manifest. In the non-indurated class local stimulants, as sulphate of copper, lunar caustic, or the acid nitrate of mercury, are the old and still favorite remedies. If the chancre be seen within a week of its origin, whether induration have already commenced or not, we believe most surgeons would destroy it freely either by nitric acid or some other caustic.—*Ibid.*

3. SYPHILITIC INFLAMMATION OF THE RETINA.—The revelations of the ophthalmoscope bid fair to add a peculiar form of retinitis to the acknowledged *rôle* of symptoms due to constitutional syphilis. A fortnight ago we noticed a very interesting case, in which lymph had been seen deposited on the retina of an infant, the subject of hereditary syphilis. A few days afterwards Mr. Critchett admitted a second case, in which a girl, whose history and appearance led to the belief that she was the subject of the same kind of taint, was losing

sight in both eyes, from the punctate effusion of lymph on the retina. Two other cases are attending Mr. Critchett's clinique, in which, in connection with acquired syphilis, retinitis with effusion has occurred. In one the effusion is in the form of isolated white dots; but in the other the whole visible extent of retina is cloudy and opaque, the optic nerve itself being but dimly seen. It is worthy of note, that in neither of these cases has there been any iritis or affection of the anterior parts of the globe.—*Ibid.*, January 2, 1858.

4. OBSERVATIONS ON THE DIAGNOSIS OF HYDROCELE. By *Professor Nélaton.*—M. Nélaton recently addressed the following observations to his clinical class:—In some cases the diagnosis of tumors of the testis presents almost insurmountable difficulties. The slightest circumstances then acquire the highest importance, and it becomes of importance that we should not attribute to any sign a degree of confidence that it does not deserve.

The Transparency of Hydrocele.—In order that this should be effectually exhibited, we should take care that the patient is not exposed to broad daylight. Another point just as indispensable is often neglected. When the surgeon commences his exploration, the sudden impression of cold causes a contraction of the dartos, and however slightly the size of the tumor may allow of its rising toward the ring, to that extent the scrotum becomes relaxed, wrinkled, and increased in thickness. This is one of the impediments to transparency, but there is another of much more importance. This ascending movement, by bringing the tumor nearer the axis of the body, prevents the light from falling perpendicularly on its surface; and the rays which fall under too oblique an incidence do not penetrate the tumor, and consequently cannot exhibit its transparency. It becomes necessary, therefore, to isolate the tumor as much as possible, to, so to speak, enucleate it, by taking hold of it near the ring and pressing it forward, separating it as much as possible from the other parts of the body. In this way the wrinkles of the scrotum also disappear, and the stretched skin diminishes in thickness. Transparency may now be easily shown, by placing the light very close, (two or three centimetres,) and on a transverse axis passing through the middle of the tumor, so that the rays may traverse it unreflected. This precaution, of no account in simple cases in which error is well nigh impossible, is indispensable in those in which the surgeon remains undecided as to the nature of the disease, precisely because he cannot establish the transparency. M. Nélaton has met with many cases in which the surgeon, from want of being aware of these facts, has mistaken hydrocele for far more important affections of the testis.

Specific Gravity.—Most surgeons attach very great importance to this sign, but it will be easy to show that it does not deserve the confidence placed in it. The hand, raising the tumor, has to estimate the weight of the entire mass; and these tumors, when even of the same nature, possess very different amounts of movability, accordingly as they are attached by pedicles, letting the hand pass on all sides, or are bound down by the contraction of the cremaster, dartos, and scrotum. Moreover, we have not to appreciate the absolute weight of the tumor, but its relative specific weight, as compared with that of another mass of a different size—a mass not now at hand capable of being compared, but estimated at some former period, under similar unfavorable conditions, its specific gravity being retained in the memory.

Let a piece of gold of a certain volume be placed in the hand of an individual, and a week afterward give him a piece of copper of the same volume, desiring him to appreciate the relative specific weight of the two metals. Certainly he will not do this readily, and the task will become far more difficult if we present to him pieces of different size. And yet the specific weight of gold is more than double that of copper. What must happen, then, when we have to compare with each other, under the above-mentioned unfavorable conditions, masses of a specific weight so slightly differing as hydrocele and the other diseases of the testis? For, in fact, the difference of the specific weight of the liquid of hydrocele, and of that of the matters constituting other diseases of the testis, is almost insignificant. Of this we may be easily convinced by examining the figures M. Nélaton has obtained by comparing the weight of various tumors with the weight of the same volume of water.

A hydatid cyst of the testis, weighing 466 grammes in the air, displaced 450 of water, giving a difference of less than $\frac{1}{30}$. An encephaloid tumor gave a difference of $\frac{1}{40}$, and a cancerous sarcocele gave a difference of about $\frac{1}{13}$. Now it is evident that a difference even of $\frac{1}{12}$ is quite inappreciable in the conditions under which the surgeon operates, while the density of the serosity of hydrocele is somewhat greater than that of water, and in the experiments the weight of the tumors are compared with that of water, without taking into account the addition of tissues which exist in the living subject. But these tissues, viz., the testis and its coverings, are nearly of the same density as encephaloid matter. It may be then said that the sign drawn from the specific gravity of tumor of the testis is positively of no value. It is one of those signs invented in the study, and has continued to be handed down to us because no one has thought of examining into its exactitude.—*British and Foreign Med.-Chir. Review*, January, 1858; from *Gaz. des Hôpitaux*, No. 124.

5. Reduction of Hernia by Compression.—In the employment of the taxis too much weight is sometimes laid upon the energy of the efforts and the violence exerted upon the herniated parts. A man, aged fifty-four, was brought into M. Nélaton's wards, having a large irreducible inguinal hernia. Many attempts at reduction had been made without success, when M. Nélaton employed compression in the following manner:—A strip of gutta-percha was placed over the upper part of the thighs, below the scrotum, and kept immoveably in this position by means of bandages; a canvas bag filled with three or four pounds of sand was then applied over the tumor; this produced a uniform pressure, which was easily borne, and the mass diminished in size. The taxis was practiced from time to time until the whole was returned.—*Medical Times and Gazette*, January 23, 1858; from *Bull. de Thérap.*, December, 1857.

6. Acute Glaucoma Cured by a New Operation. (Under the care of *Mr. Critchett.*)—An operation has recently been performed by the above gentleman, so novel in its character, so simple in its execution, and, as the subsequent history of the case proved, so successful in its result, that we are desirous of

taking this early opportunity of bringing a few leading particulars of the case before the notice of the profession.

The subject of the operation we are about to describe was a working engineer, aged thirty-four. A few days previously he was attacked with sudden and severe inflammation of the globe, with intense pain. The pupil was fixed and widely dilated; the lens looked dull, and the sight was so dim that there was merely perception of light. The other eye had been destroyed by an accident about five years ago. Mr. Critchett introduced a broad needle through the cornea, close to its junction with the sclerotic into the anterior chamber; he then drew out a portion of the iris and cut it off, leaving at the same time a small portion in the wound. The immediate effect of this proceeding was entirely to relieve the pain, and we learned that the sight gradually improved and the pupil recovered its mobility. In about a fortnight the man was able to read moderately sized print.

Mr. Critchett remarked that he considered this a case of acute glaucoma, and the object of the operation was to relieve the distension of the globe, and, by leaving a portion of iris in the wound, to prevent for a time an undue reaccumulation of fluid. He had recently adopted this proceeding four times, in similar cases, with the best results, and he felt that a disease which he, in common with all ophthalmic surgeons, had hitherto regarded as fatal to sight, was now brought within the control of art by a slight and safe operation.—*Lancet*, January 30, 1858.

PATHOLOGY AND MEDICINE.

1. LIABILITY OF NEGROES TO THE ENDEMIC DISEASES OF THE SOUTH.—The fact is so glaring, and so universally admitted, that I am really at a loss to select evidence to show that there is no acclimation against the endemic fevers of our rural districts. Is it not the constant theme of the population of the South, how they can preserve health ? and do not all prudent persons, who can afford to do so, remove in the summer to some salubrious locality, in the pine-lands or the mountains ? Those of the tenth generation are just as solicitous on the subject as those of the first. Books written at the North talk much about acclimation at the South ; but we here never hear it alluded to out of the yellow-fever cities. On the contrary, we know that those who live from generation to generation in malarious districts become thoroughly poisoned, and exhibit the thousand Protean forms of disease which spring from this insidious poison.

I have been the examining physician to several life-insurance companies for many years, and one of the questions now asked in many of the policies is, "Is the party acclimated ?" If the subject lives in one of our southern seaports, where yellow fever prevails, and has been born and reared there, or has had an attack of yellow fever, I answer, "Yes." If, on the other hand, he lives in the country, I answer, "No ;" because there is no acclimation against intermittent and bilious fevers, and other marsh diseases. Now, I ask if there is an experienced and observing physician at the South who will answer differently? An attack of yellow fever does not protect against marsh fevers, nor *vice versa.*

The acclimation of negroes, even, according to my observation, has been put in too strong a light. Being originally natives of hot climates, they require no acclimation to temperature, are less liable to the more inflammatory forms of malarial fevers, and suffer infinitely less than whites from yellow fever: they never, however, as far as my observation extends, become proof against intermittents and their sequelæ. The cotton planters throughout the South will bear witness, that, wherever the whites are attacked with intermittents, the blacks are also susceptible, though not in so great a degree. My observations apply to the region of country removed from the rice country. We shall see, further on, that the negroes of the rice-field region do undergo a higher degree of acclimation than those of the hilly lands of the interior. I know many plantations in the interior of Alabama, South Carolina, Georgia, Mississippi, and Louisiana, on which negroes of the second and third generation continue to suffer from these malarial diseases, and where gangs of negroes do not increase. (P. 376.)

And again: Certainly, negroes do suffer greatly on many cotton plantations in the middle belt of the Southern States; and I have seen no evidence to prove that negroes can, in this region, become accustomed to the marsh poison; and my observation has been extensive in four States. A question here arises: Is their any difference in types of those malarial fevers which originate in the flat tide-water rice-lands, and those of the clay-hills, or marsh fevers of the interior? I am inclined to think there is.—*Indigenous Races*, p. 376; Art. "Acclimation," etc. By J. C. NOTT, M.D., of Mobile, Alabama.

2. CLINICAL OBSERVATIONS ON EPILEPSY. By *Dr. Th. Herpin.*—Dr. Herpin's name is familiar to the medical profession on account of his urgent advocacy of the employment of oxide of zinc in the treatment of epilepsy. He now abandons this preparation entirely in favor of the lactate of zinc. The greater solubility and digestibility of the latter would *à priori* engage our sympathies in its favor. The following is one of the cases which have decided the author's preference, and deserves to be recorded on account of the success obtained in spite of the unfavorable prognosis which the case would have justified in the first instance.

Miss E., aged eleven and a half, consulted Dr. Herpin, February 1st, 1854. She was well made, intelligent, and pleasing. Her paternal grandfather had died epileptic at forty-nine years of age; her maternal grandfather at seventy-six, after being insane for six years, and in a state of melancholy for forty years. No predisposing or exciting cause was traceable in the patient, excepting perhaps the fright caused by a fire two months previous to the first attack. She enjoyed excellent health till six years of age, when she had typhoid fever, having on the right side a tendency to slight and evanescent deafness. Three months before the first seizure she was attacked with frequent headache, generally commencing in the morning, and lasting till evening. The headache ceased in December, 1853. The first fit occurred on August 15th, 1853, the second on September 5th, the third on September 26th; six then followed at variable intervals, making altogether nine in less than five months; they always took place during the first hour of sleep, and the evening before the attack she was observed to be somewhat excited. The symptoms, which are detailed, leave no doubt as to the attacks having been those of genuine epilepsy. The oxide of zinc had been prescribed for the patient from September to the following July, but she was unable to bear the doses which Dr. Herpin thinks necessary in order to make a proper impression upon the patient. He was once able to reach a dose of six grammes (ninety grains) per week, but he was obliged to diminish it. Still the attacks ceased from January the 8th to July the 18th; but a return on that day, brought on by a tepid bath, induced Dr. Herpin to have recourse to the lactate of zinc, which he gave for above six months, during which time the patient swallowed 306 grammes, (4600 grains.) The tolerance of the remedy was complete, and when she left off taking it she was in perfect health. There was one recurrence of epilepsy two months after commencing the lactate. Three years have since elapsed, and the lady's health continues sound.—*L' Union Médicale*, No. 121, 1857. *British and Foreign Med.-Chir. Review*, January, 1858.

THERAPEUTICS.

1. EXPERIMENTS WITH BIBRON'S ANTIDOTE TO THE POISON OF THE RATTLESNAKE, ETC. ETC. *By William A. Hammond, M.D., Assistant Surgeon U.S. Army.*—Some four years since, Prince Paul, of Wurtemburg, the celebrated naturalist, communicated to my friend, Mr. De Vesey, the results of some experiments performed before the French Academy of Sciences by Professor Bibron, relative to an antidote to the poison of the rattlesnake. According to Prince Paul, Professor Bibron allowed a rattlesnake to bite him in the lips, cheeks, etc., and, by taking the antidote discovered by him, prevented all alarming symptoms, and, in fact, suffered no inconvenience therefrom.

The antidote in question, as stated by Prince Paul, is prepared according to the following recipe: ℞.—Potassii iodidi gr. iv; hydrarg. chloridi corros. gr. ij; bromini ʒv.—M. Ten drops of this mixture, diluted with a tablespoonful or two of wine or brandy, constitute a dose, to be repeated if necessary. It must be kept in glass-stoppered vials, well secured.

Prince Paul forwarded a small quantity of the above mixture to Mr. De Vesey, who used it successfully in the cases of two men bitten by rattlesnakes near his residence in Iowa.

During a recent expedition to the rocky mountains, I had several opportunities of testing its efficacy, and, since my return, have performed additional experiments with it. The results have been, upon the whole, exceedingly satisfactory, and I think that, when taken in time, it may be entirely depended upon in the poisonous wounds of the rattlesnake, and, perhaps, also in those of other venomous serpents.

1*st Experiment.*—Heinrich Brandt, acting hospital steward, was bitten, on the 2d of July, 1857, in the index finger of the right hand by a large rattlesnake, (*Crotalus confluentus*,) which he was in the act of putting into a jar for preservation. The snake inflicted a very deep wound, and hung by his fangs to the finger for a second or two before it could be detached. About four minutes after the bite, and before much pain or swelling had ensued, I administered one dose of Bibron's antidote. The symptoms almost immediately disappeared. Forty minutes after giving the first dose the pain and swelling returned, attended with considerable throbbing. I repeated the medicine, and in less than five minutes the finger had regained its natural appearance, and all pain and swelling had vanished. He remained perfectly well, and resumed his duties in an hour from the reception of the injury.

2d Experiment.—A very large rattlesnake was made to bite a young wolf (*Canis occidentalis*) about three months old. The serpent wounded the animal severely in the left flank. Fifteen minutes after the bite the leg was much swollen, and the wolf exhibited signs of great uneasiness, yawning, stretching, and looking about in an anxious manner. These symptoms continued to increase in intensity till inability to stand, drowsiness, and slight convulsive movements ensued. I now (thirty minutes from the infliction of the wound) gave six drops of the antidote, with the almost instantaneous disappearance of the observed symptoms. In a few minutes afterwards the animal ate a large piece of meat.

3d Experiment.—On the following day the same snake was made to bite the wolf three times in the space of five minutes, in the flank, neck, and chest. In two minutes after the last bite the effects of the poison were evidenced by the inability of the wolf to stand, gasping respiration, and a fixed expression of countenance. Some delay occurred in getting the antidote ready, and before I could administer it all signs of life had apparently ceased. Nevertheless, I placed six drops far down the throat, where it seemingly remained, as no effort of swallowing was perceived. However, in one minute respiration again commenced, and the heart could be felt to pulsate. The wolf lived for twenty-seven minutes, and then died comatose.

The rapidity of the action of the poison in this case, owing to the large quantity introduced into the system, prevented a successful issue. The good effects of the antidote were, however, sufficiently apparent to every observer, and I have no doubt that, had it been given before the faculty of swallowing was lost, the life of the animal would have been saved.

4th Experiment.—After my return to Fort Riley, a large *Crotalus confluentus*, which I had brought with me from the Rocky Mountains, was made to bite a dog five months old. The wound was made in the right shoulder. The poisonous effects of the bite commenced in ten minutes, causing gasping respiration, inability to stand, etc. I attempted to give a dose of the antidôte, but the dog would not swallow, and I had no means at hand by which to introduce it into the stomach. I again tried to administer the remedy, but without success. The third dose was inhaled into the lungs. By this time the dog was perfectly senseless, and died in forty-five minutes after the infliction of the bite. Very slight swelling occurred in the wounded part.

5th Experiment.—Forty-five minutes after the last experiment the same snake was made to bite another dog of the same litter as the preceding. The wound was inflicted in the lower jaw, very near the mouth. At the end of three minutes, and before any violent symptoms ensued, a dose of the antidote was given. The dog swallowed it readily. Five minutes afterward the animal seemed very uneasy. Respiration was accelerated, and he preferred to lie down in the shade. At the end of about fifteen minutes he could stand with difficulty; and, as the sickness appeared to be on the increase, another dose was administered. Nearly half of this was lost. Slight swelling was now perceived in the face and neck. When roused the animal would walk a few yards, though with great difficulty, and evidently preferred rest and quiet. About one hour after the bite he lapped a little milk and seemed to be better, wagging his tail when spoken to, and walking with less effort. No increase of the symptoms occurred, and, in fact, the dog was, to all appearance, perfectly well in two hours after the reception of the injury, except that slight swelling of the under jaw still remained. I saw him no more till next morning, when this had disappeared and he was as active and lively as ever.

I had no further opportunities of repeating the experiments with other animals. During my absence, however, the antidote was used by Dr. Coolidge, U.S. Army, (to whom I am also indebted for assistance in the latter experiments,) in the following case, of which he has favored me with the subjoined account:—

"In July, 1857, a girl, aged fifteen years, was bitten, at Fort Riley, by a rattlesnake, on the dorsal aspect of the first phalanx of the ring finger of the right hand. In a few moments the finger became swollen and bluish, and when I first saw her, about ten minutes after the receipt of the wound, the forearm had begun to swell, and pain extended to the elbow. She was depressed and somewhat nauseated. An elder sister had sucked the wound from the first instant. There being sufficient space above the wound, I applied a cord tightly around the finger, and then made a free incision down to the bone. As soon as the articles could be procured from the hospital, I gave ten drops of the bromine mixture diluted, and injected into the wounded finger the preparation recommended by Dr. David Brainard, of Chicago, Illinois, (see *Annual Report Smithsonian Institution*, 1854.) viz.: ℞.—Iodinii, grs. x; Potasii iodidi, grs. xxx; Aquæ destillatæ, f℥j.—Solve. The patient expressed herself relieved after the first dose of the bromine; a second was given in twenty minutes. The solotion of iodine injected caused severe smarting pain; the fluid and air from the syringe could be felt a little above the wrist, and ultimately caused suppuration of the cellular tissue on the back of the hand. Nothing more was done. The girl recovered."

In conjunction with the mixture referred to in this paper, it will be observed that Dr. Coolidge laid open the wound and injected the cellular tissue with tincture of iodine, as recommended by Dr. Brainard, of Chicago, so that the favorable result in this instance cannot be attributed solely to the use of Bibron's antidote.—*American Journal of Medical Science,* January, 1858.

2. ON THE THERAPEUTICAL ACTION OF CHLORATE OF POTASH, WITH A NEW MODE OF ADMINISTERING IT. By *Dr. Dethan.*—Dr. Dethan considers that chlorate of potash is a powerful sialagogue, and that its elective action on the bucco-pharyngeal mucous membrane is well marked. To this physiological action is added a very remarkable and valuable success in pathology; its rapid and incontestible effects in mercurial salivation, by checking the formidable

mercurial affection, have permitted practitioners to continue the mercury without fear, and thus to contend without remission against the constitutional infection. As an especial and incontestible remedy in ulcero-membranous stomatitis, this medicine need not, according to the physicians of the Hôpital Sainte-Eugénie, be swallowed; its topical application is sufficient, and in a short time the mucous membrane recovers its normal qualities and functions. Dr. Dethan concludes that the chlorate of potash, administered under a special form, which would permit the local action to be exercised slowly and certainly, although leaving the medicine to be carried into the stomach in a state of solution with the mixed liquids of the salivary, buccal, and pharyngeal glands, would be the mode of administration which would combine all indications and all opinions. He therefore suggests the use of the remedy in the form of pastiles, so that the patient may have at hand a remedy against the injurious effects of a mercurial treatment which he may be undergoing. The experiments of Dr. Ricord, and the publications of M. A. Fournier, testify incontestibly in favor of this successful simultaneous medication. In certain forms of angina attended with fibrinous exudations, it prevents the intimate adherence of the false membranes to the mucous membrane, and facilitates their expulsion, and assists the action of emetics. In this affection the topical action of the chlorate, favored by the bruising between the teeth, the natural solution in the liquids of the mouth, and its penetration into all the points interested, will be certainly efficacious. In debilitating diseases, such as diphtheritis, and gangene of the mouth, the child will find an agreeable and reparative kind of food, together with the most appropriate remedy hitherto discovered, against these diseases.—*British and Foreign Med.-Chir. Review*, January, 1858; from *L'Union Médicale*, June 4th, 1857.

Editors' Table.

Suits for Malpractice.—In what light are we to regard the growing fondness for bringing suits for malpractice, alleged or real, against medical men, and, more particularly, against those who take charge of surgical cases? Shall we call the course thus pursued prosecution or persecution,—an honest claim for reparation on the part of the patient for injury causelessly and ignorantly inflicted on him, or a nefarious scheme for his not only evading the payment of fees for services rendered, but also for extorting money from his professional attendant, on the plea that these services were not sufficiently full and complete, and have not been attended with the success anticipated? The stupidity, obstinacy, and even drunkenness of the patient, by which professional injunctions are misunderstood, opposed, or neglected, do not seem to be always a bar in the minds of a jury against mulcting the surgeon in a considerable sum, in the shape of damages. Other obstacles to the hoped-for cure, depending on constitutional feebleness and unsoundness, either inherent, or the result of intemperance and a generally dissolute life, are ignored or determinedly overlooked, in the intentness of the maimed or recently deformed man to extort money from the purse of his doctor, in place of dropping a handsome honorarium into this seldom well-replenished receptacle. Under circumstances like these, and some others which might be adduced, an action for malpractice goes far beyond the ingenuity which suggests a cross suit: it approaches rather, but in a more formal manner, and with a show of legality, to the conduct of a beggar, who, while in the act of receiving a modicum to relieve his immediate necessities, unexpectedly presents a pistol to the breast of his benefactor, and insists on the latter handing over to him his purse with all its contents. We may expect, if juries are so ready to encourage by their verdicts this new phase of extortion, to find a hitherto unlooked-for addition to the beneficial societies which pay their sick members a certain sum weekly. He who is laid up with a fractured limb or a dangerous wound, or with a disorder for the relief or cure of which an operation has been performed, will receive his stated allowance from the society during the time of his confinement to the house; and, when he gets about, if he does not walk as straight, or move his arm, or have had his sight restored, as he expected, he may, with the assistance of a good special-pleader, and a willing jury, procure a round sum from his attending surgeon, by accusing the latter of malpractice.

Physicians labor under the disadvantage of being regarded as constituting a priviliged class, at the same time that they are actually denied the possession of any substantial privilege. They enjoy no exclusive honors or emoluments, nor exemption from taxes, public or private, direct or incidental: but they get credit for having a charmed life, through which they are supposed to enjoy immunity from disease, and even from feelings of fatigue and exhaustion incident to exposures of all kinds, and to the calls made on them at all hours and seasons. When pestilence stalks abroad, and prostrates its victims in all directions, they are honored with peculiar deference and protestations of confidence and regard, —they again become a privileged class: they have the undisputed privilege of being courageous in the midst of danger, and of submitting to a wear and tear of mind and body beyond what would seem to be the limits of human endurance. If some of them sink under the accumulated load, and perish, victims to their heroic devotion in the cause of humanity, some words of regret are uttered in the immediate circle of their patients, a few lines of eulogy find their way to a newspaper; but the community, in whose behalf they so nobly battled, never asks about, never hints at making any provision for their families, left, perhaps, in straitened circumstances, if not in destitution. And the survivors from the pestilence—what is their reward? A vote of thanks, and, perhaps, a silver pitcher, with their remembrance of the thousands on whom, at all hazards to their own lives, they have lavished their time and their services, without, except in a comparatively small number of instances, any pecuniary return. There is yet another privilege conceded to physicians—viz.: to live without income, and in noble disregard of fees. For one instance of a gracefully tendered addition to the amount of their bills by a restored patient, there will be found a hundred of begrudged or deferred payment; and a manifest desire, under one pretext or another, to cut down the amount. The gratuitous services rendered by physicians to the poor, and the nominal fees from many in reduced circumstances, so far from exciting responsive feelings among the rich, would seem, in some instances, to prompt the latter to additional vigilance in scrutinizing their medical accounts, for fear that they might by chance contribute indirectly to this fund of benevolence, by paying what they are sometimes pleased to call high charges.

In these remarks we do not speak of the motives and feelings which prompt medical men to discharge their high duties; but only of the slim appreciation of their services by the community, and a readiness to tax them in every possible manner. We are disposed to regard as an extension of this jealous fear of remunerating a physician for his services to the sick, the growing desire to seize on any plausible pretext for levying fines on him for alleged malpractice. The community is not entitled to assume the tone of a liberal and discriminating benefactor, and to say to physicians, "You are well and regularly paid in every case in which you perform your duty; and it is but fair that you should suffer by fine when you are wanting in its discharge." The first part of the proposition is not true, and the second, intended to be its sequence, falls to the ground.

Looking at the subject from a higher stand-point, shall we be told, that the State, ever watchful of the welfare of its citizens, guards their health with peculiar care, and not only prohibits any tampering with it by ignorant pretenders and quacks, but provides the means for educating a body of competent physicians, whose knowledge of and familiarity with public and private hygiene and the cure of diseases, prepare them for every emergency. Consistently with ihis intention, even if provision be not made, every encouragement is of course given for prosecuting the study of anatomy, so indispensable to the obtaining a knowledge of the structure of the human body,—a knowledge which lies at the foundation of all surgery, and without which the treatment of fractures, dislocations, and wounds is necessarily uncertain and hazardous. But what must be the surprise and indignation of the benevolent and philosophical inquirer to learn that, so far from this bright picture being the true one, dissection of the dead, and the procuring a subject for the purpose, are regarded in the light of *magnum delictum*, which subjects the unfortunate seeker after knowledge to fine and imprisonment, as if he had committed felony or a breach of the peace by a violent assault on his neighbor. Still, although prohibited by these penalties from learning surgery in a fitting manner, the practitioner is supposed to have acquired, by some intuitive process or species of magic, a knowledge sufficient to guide him through all difficulties. Hence it may happen, that in the very same community, and by the very same men, acting as jurors, a student of medicine will be punished for an attempt to acquire a knowledge of anatomy, and, in a few years from that time, he will be punished, in the shape of damages, for betraying ignorance, in his treatment of a fracture or a dislocation of parts of the structure and mechanism which belong to anatomy.

Not only does legislation fail to make suitable endowments for medical education, but it draws no distinction, either in the way of warning or encouragement, between those who are educated and prepared to take charge of the sick, and those who are ignorant and illiterate, and yet engage in the same mission. Time shows the difference between the two, but not until heavy penalties are paid in preventible deaths, and in lasting injury to the health of a large number of persons. After all, the public is more prone to receive with favor bold and shameless pretenders, than to inquire into the merits of unobtrusive worth; and it inclines a more willing ear, and affords more direct patronage, to a natural bone-setter than to the most experienced surgeon. The fellow-feeling will go so far as to make it deal more leniently with the former after his mischievous manipulations, than with the latter under the accusation, even without adequate proof, of inattention or mistake in his practice in a particular case charged.

Having shown that no claim in equity can be made by the community, or even by the State itself, for the punishment of malpractice on the part of a medical man, we have next to inquire into the real position of the latter, his actual responsibilities, and the tribunal to which he is properly amenable. This part of the argument will engage our attention in a future editorial talk.

AFRICAN EDIBLES.—In Barth's very instructive if not entertaining "*Travels and Discoveries in North and Central Africa*," we meet with frequent notices of the articles of food, chiefly from the vegetable kingdom, used by the inhabitants of those extensive regions. The subject is interesting, both in a hygienic and economic point of view; and as such we now bring it before our readers, without any regard to methodical arrangement, but rather as we find it in the volumes before us. Barth's starting point was Tripoli. He made an excursion, however, previously, in an eastern direction, through the Regency.

Soon after setting out, the travellers emerged from the palm-groves which constitute the charm of Tripoli. Then they came to the fine date-plantations of Zenzer, celebrated in the fourteenth century as one of the fairest districts of Barbary, and they pass by a great magazine of grain. Fine olive trees pleasingly alternate with the palm-grove, while the borders of the broad sandy paths were neatly fenced with the *cactus opuntia*, or prickly pair. As preparation for their nomadic life in crossing the desert, they laid in a supply of corn and dates. The fruit called gatuf of the batim tree, (*Pistacia Atlantica*,) or Barbary Mastich, is used by the Arabs for a variety of purposes. In other countries its fragrant and astringent resin is best known. The rearing of fruit trees seems to be a favorite occupation of the Berber race, even in the more favored spots of the Great Desert. The cultivation of the olive extends to the borders of the Desert. Saffron and olives are the two staple articles of industry in this region, the maritime one of Tripoli. The cultivation of grain is made productive by means of irrigation.

On the second departure of the travellers from Tripoli, their course was nearly due south, to Murzuk, on the border of the Desert. On the oases of Mizda, and some others still farther south, barley and wheat in cultivation were found in the vicinity of olive and fig trees. The soil around Mursuk, a little to the south of 21° N. latitude, is very arid: even in the plantations which surround it there are only a few favored spots, where, under the protection of a deeper shade of the date trees, a few fruit trees can be cultivated, such as pomegranates, figs, and peaches. With great labor, wheat, barley, gedheb, (or rather kédheb,) are cultivated. Culinary vegetables, including onions, are extremely scarce; milk, except a little from the goats, is quite out of the question.

In the oases of Ghat and Barakat, Guinea corn, gero or millet, (*Pennisetum typhordeum*,) is cultivated to a much greater extent than wheat or barley. Palm-groves are repeatedly passed, and irrigation witnessed in the fields and gardens. In the valley Nghakeli, richly overgrown with luxuriant herbage and adorned with fine tallha trees, was exhibited the first specimen of the *Balanites Œgyptiaca*, (hajilig, of the Arabs,) of which we shall soon speak. In this region, at the bottom of a valley skirting mountain masses, was seen the grass *Avena Forskalii*, which is very much liked by the camels. Here, also, the travellers partook of the flesh of the Wadán, (*Ovis trugdaphos*,) an animal very common in the mountainous districts of the Desert, and found often in company with the wild ox.

Though not ranking with edibles, we may mention, by the way, that in latitude 20° N., the senna plant (*Cassia senna*) appeared in tolerable quantity. More germain to our actual theme is the appearance, in this district, the valley of Gebi, of the absiga, (*Capparis Sodata*,) a variety of the caper, called siwak, or lirak, by the Arabs. This, writes Barth, "is an important bush, the fruit of which is not only eaten fresh, but also dried, and laid up in store; while the root affords that excellent remedy for the teeth which the Mohammedans, in imitation of their prophet, use to a great extent. The root, however, at least on the shores of the Tsad, by the process of burning, affords a substitute for salt. It is the most characteristic bush or tree of the whole region or transition between the desert and the fertile regions of Central Africa, between the twentieth and the fifteenth degrees of northern latitude.' In the course of his travels, Barth saw it nowhere of such size as on the northern bank of the Isa or Niger, between Timbuktu and Ghago; the whole ground which this once splendid and rich capital of the Singhay Empire occupied being at present covered and marked out by this celebrated bush. The berries, although only ripening, (August 22d,) afforded a slight but refreshing addition to the food of the travellers.

Skirting the mountain group of Tintellust, elevated 5000 feet above the ocean, Barth and his companions passed through the valley of Selufiet, in lat. 19° N., rich in trees and bushes, but without herbage. Here he met with his old acquaintance from the Said and Nubia, the dum-tree or dum palm, (*Cucifera Nigritia.*) This tree has a wide geographical range through Central Africa; but its chief region is that of Bornu proper. Its fruit is an essential condiment to the soup made of Negro millet or Guinea corn. At Tintellust, in the mountainous country of Air or Asben, which Barth calls the Switzerland of the Desert, he and his friends received a small supply of millet, butter, and a little fresh cheese, and they purchased two or three goats and a camel-load of durra, (*holcus sorghum,*) of the dietetic value of which last grain we shall speak hereafter.

Leaving his companions at Tintellust, Barth made a journey to Agades, in a southwesterly direction. On the way, in the village of Eghellal, at the foot of a mountain of the same name, his eyes were greeted with the sight of well-fed cattle returning from their pasture-grounds. "They were fine sturdy bullocks of moderate size, all with the hump, and of a glossy dark-brown color." It conflicts much with our ideas of the great desert of Sahara, to be told, as we are by our traveller, that in the valley of Aideras, in Air, he saw not only millet, but even wheat, the vine, and dates, and almost every species of vegetable. A little farther south, in the valley Budde, where the mimosas attained a large growth, Barth first became acquainted with the karengia or *Pennisetum distichum,* on the seed of which many of the Tawarek from Bornu, as far as Timbuktu, subsist more or less. The drink made from it is certainly not bad, resembling in coolness the fura or ghussub-water. The grass itself is a most nourishing food for cattle. The little burr-like seeds are, however, a great annoyance to the traveller in Central Africa, by attaching themselves to every part of the dress. Hence the necessity, not neglected even by the natives, to be always provided with small pincers, in order to draw out from the fingers the little stings which, if left in the skin, will cause sores.

As the market of a place affords a pretty good indication of the dietetic usages of the people, we may begin references of this nature by speaking of that of Agades. Negro millet is the real standard of the market, and in it the merchants of the town chiefly trade. The display of vegetables was poor; only cucumbers and molukhia (*corchorius olitorius*) being procurable in considerable plenty. The butchers' market was well furnished. Barth was gratified by a present, from a blacksmith friend of the place, with a large batta or leather box holding butter and vegetables, (chiefly melons and cucumbers,) and the promise of another sheep. In the more favored valleys of Air or Asben there are considerable herds of cattle. A long desert plateau intervenes between Asben and the Tigama country, a region the border one of the desert, and rich in cattle. Their slaves are busy in collecting and pounding the seeds of the karengia or azak, the *Pennisetum distichum*, which constitutes a great part of their food. The desert region just mentioned is the home of the giraffe, wild ox, ostrich, etc. In this part of the journey the travellers made the acquaintance of another tree, a native of Middle Sudan, named magaria by the Arabs, and kusubu by the Kanuri. It produces a fruit of a light-brown color, nearly equal in size to a small cherry, but in other respects more nearly resembling the fruit of the cornel, (*Cornus*.) When dried, it is pounded and formed into little cakes, which are sold all over Hausa as *tuwo-n-magaria*. It may be safely eaten by a European to allay his hunger for a while, till he can obtain something more substantial. The next district to the south, traversed by the line of the fifteenth degree of north latitude, is Damerghu, an undulating rich country, the granary of, and tributary to Asben. The production of grain consists in millet of the white species: durra or sorghum is not seen. Here the travellers met once again with the first poor specimens of the magnificent tamarind tree, the great ornament of Negroland.

The desert being passed, and the travellers fairly in Bornu, and of course in Central Africa, the dietary of the people, resulting from a richer soil, extensive pastoral regions, and rivers, became more abundant and varied. The change was more marked at Tasawa, where Dr. Barth made some stay. Before reaching this place, and near a village called Baibay, the varavan was surrounded by a great many women who offered for sale "godjia" or ground-nuts, and "dukkwa" or a sort of dry paste made of pounded Guinea corn, (*Pennisetum*,) with dates and an enormous quantity of pepper. This is the meaning of dukkwa in these districts; it is, however, elsewhere used as a general term signifying only paste, and it is often employed to denote a very palatable sort of sweetmeat made of pounded rice, butter, and honey. Leaving our readers to the indulgence of the sweet memory of such a compound, we shall not task their attention further at this time; but shall avail ourselves of a future opportunity to make them acquainted with the edibles and condiments of Negroland proper.

THERMAL SPRINGS.—An inquiry into the causes of the increased temperature of subterranean waters, and of the springs which they supply, is one of great geological interest, and forms, at the same time, an important portion of the natural history of mineral springs. The question of thermalization may indeed be studied separately from that of mineralization; but, for the most part, the two are blended, the one with the other.

Shall we, with Fourier, admit three constant causes of the temperature of the globe which we inhabit? These are—1. The sun's rays, the unequal distribution of which produces the diversity of seasons and climates. 2. The radiation of caloric and light from innumerable celestial bodies which surround the solar system. This is the temperature of the planets. 3. The primitive heat which the earth contained when the planets were first formed, and a part of which it retains in the interior of its mass. We shall concern ourselves on this occasion with this last source of terrestrial heat. The form of the spheroid which we inhabit, the regular distribution of the inferior strata, made manifest by the experiments with the pendulum, their density increasing with their depth, and various other considerations tend to prove Fourier's opinion,—viz., that a very intense heat has pervaded all parts of the globe. This heat was dissipated by radiation into surrounding space, the temperature of which, beyond the common atmosphere, is much lower than that of the freezing point of water. The mathematical expression of the law of refrigeration, as announced by Fourier, shows that the primitive heat contained in a spheroid mass of such large dimensions as the earth, diminishes more rapidly at the surface than at the parts situated at a great depth. These last preserve nearly all their heat for a wonderfully long period.

Experimental observations give full support to this theory, by their showing that the heat, after a certain distance beneath the surface or below the line of invariable temperature, dependent on the sun's rays, increases regularly with increase of depth. Thermometrical observations show, also, that the actual distribution of heat in the crust of the earth is precisely that which would take place if the globe had been formed in a medium of a very high temperature, and then subsequently cooled.

It may be made a question, how long and how far may the cooling process be expected to go on in the interior; and to what extent does the caloric escape from the central focus, and is radiated from the earth's surface? Resting his deduction on observations made of the time taken for spheroidal bodies of a high temperature to cool, Fourier asserts that thirty thousand years must elapse before the present rate of increase, which he estimates to be equal to one-thirtieth of a degree of the centigrade thermometer, or a little more than a sixteenth of a degree of Fahrenheit, for every metre, or three feet, three inches, four lines in depth, would be reduced to one-half of what it is at present. From the time of the Greek school of Alexandria to the present, a period of upwards of two thousand years, the temperature of the surface of the earth has not been diminished, by radiation of the heat reaching it from the interior, by more than the 300th part of a degree of Fahrenheit.

There is quite a uniformity in the general results of observations made in the mines of Brittany, Saxony, England, Mexico, and Peru, whether they are of silver, copper, tin, coal, or salt; all going to prove an increase of temperature with that of the depth. This is manifested both in the galleries of the mines and in the springs rising in them, and also in the rocks composing their sides. These great diversities of geological and minerological characters indicate clearly a general cause, quite independent of any local accumulations, such as the presence of pyrites, coal formations, etc. Pointing clearly to the same conclusions are the thermometrical records in the case of artesian wells; and, above all, the volcanic activity of the earth in ejecting molten masses from opened clefts or fissures.

From these premises respecting the causes of the temperature of the earth we readily deduce the inference that the cold or common springs, and those of a more elevated temperature, or thermal ones, constitute two systems; the former deriving their temperature from that portion of the earth which is under solar influence; the latter obtaining theirs from the deeper seated and probably central heat. Cold springs, from this showing, will be found to be in relation with the upper strata, and the thermal ones of a high heat, with the inferior or deeper strata.

The common springs of a country. although undergoing some fluctuations of temperature coincident with those of the different seasons, approach very nearly to the annual mean of the temperature of the soil, and also of the atmosphere. Hence the temperature of the common springs is often taken, not only as an exponent, but as an equivalent of that of any given spot, of which we have not had opportunity for keeping a thermometrical record, for a sufficiently long period, to allow of our ascertaining, in this way, the mean for the year. This mean is also represented by the line of invariable temperature at a certain depth beneath the surface, which may be considered as the limit of the passage of solar heat from the surface, and of that of internal heat from below. This limit must naturally vary in its depth, according to the degree and duration of the atmospheric heat, the nature of the soil and of the strata, and the elevation above the ocean, of the spot where the observation is made. At the equator, this line will be only a foot or so below the surface, while at Paris, in N. lat. 48° 50′, it is very little under 93 feet. If we imagine a curve drawn from the equator to the poles, all the intermediate points of which should have the same temperature, and take the mean of that on the equator at 81° F., as a starting point, it will be very little beneath the surface there; but it will be deflected downward more and more as the latitude increases; and in the Arctic circle or near the poles it will be at the greatest depth in the earth. This curve, if it were to pass through Northumberland, (Eng.,) would there dip as low as 1365 feet; for at this depth the waters below the bottom of the mines have the mean temperature of the equator. Near Paris, again, the curve would go much deeper to reach the same temperature, if we were to form an opinion from that of the artesian well of Grenelle, which, at a depth of 1800 feet below the surface, has a temperature of 82·4° F.

To the class of imaginary subterranean lines of this kind the term *Isogeothermal* has been applied by Kupffer, and *Chthonisthermal*, or *Subterranean Isothermal Lines*, by Bischoff. A series of these, while they would indicate the increasing temperature of the earth with the augmentation of distance from the surface, could not be expected to be parallel to the surface or to each other. They must undergo deflections similar to those of the isothermal lines which indicate the mean temperature of the surface and incumbent atmosphere of the place which they traverse.

In using the term *thermal* in connection with the water of springs, we give it a much larger significance than is commonly conveyed, since it will include not only hot, and warm, and tepid springs, but also all those which have an average temperature exceeding that of the soil, or of the ordinary cold springs at the level of the spot whence they are emitted. It matters not, therefore, according to this definition, whether the excess be 5° or 50° F., the term thermal is still applicable.

Were we writing an elaborate essay in place of merely offering the more prominent points of the subject, we would inquire into the cause or causes of the internal heat of the earth, of which thermal springs, volcanos, and earthquakes are evidences on a large scale. It will be sufficient, just now, to mention the three theories which divide the schools of geology respecting the origin of the great classes of cosmical phenomena referred to — viz. the *electrical*, the *chemical*, and the *mechanical*. The last theory is most consonant with the larger number of geological and metereological phenomena, and even mathematical calculation; and it enlists in its favor probably the greater number of natural philosophers and geologists, at the head of whom we may name the celebrated La Place. This theory supposes a permanently internal heat of the earth, kept up by a fusion of its central portion on which the crust of the earth rests.

Admitting the progressive increase of temperature as we recede from the surface of the earth, the next question which arises is the rate of this increase. Cordier estimates the average rate, as deduced from observations made in mines and in other ways, to be forty-five feet for every degree of Fahrenheat. We find the average, from observations made on artesian wells in Great Britain, France, and Germany, to be a little over forty-one feet for every degree of Fahrenheat. If we grant Cordier's estimate, and assume the increasing temperature to be continued downward, we should reach the ordinary boiling point of water at about ten miles below the surface; and at the depth of twenty-four miles we should arrive at the melting point of iron, a heat sufficient to fuse almost every known substance, and which, according to the experiments of Daniell, is equal to 2786° Fahr.

The geological affinities of thermal springs will form, on a future occasion, a brief introduction to an account of their geographical distribution. Our collection, made with some care and after a good deal of search, is, we believe, much larger than can be found in any work which treats professedly of mineral and thermal springs.

MONSTROSITY. — In the history of double monsters, which was gone over at the time when the Siamese Twins were exhibited, we do not remember if the following description of one was referred to on that occasion. It is given in William of Malmesbury's "Chronicle of the King's of England." *Bohn's Edition*, p. 235.

"At that time (A.D. 1065) on the confines of Brittany and Normandy a prodigy was seen in one, or, more properly speaking, in two women: there were two heads, four arms, and every other part twofold to the navel; beneath were two legs, two feet, and all other parts single. While one was laughing, eating, or speaking, the other would cry, fast, or remain silent; though both mouths ate, yet the excrement was discharged by only one passage. At last one dying, the other survived, and the living carried about the dead for the space of three years, till she died also, through the fatigue of the weight and the stench of the dead carcase."

NEW MEDICAL JOURNAL.—We have received the first (January) number of the *Pacific Medical and Surgical*

Journal, edited and published by John B. Trask, M.D., and David Wooster, M.D., of San Francisco, California. This new candidate for professional patronage is a monthly of forty-eight pages, and is now the only medical periodical published on the Pacific coast, the *California Medical Journal* having recently become extinct. We heartily wish it abundant success.

FUSION.—The *Western Lancet* and the *Cincinnati Medical Observer* have been united under the title of the *Cincinnati Lancet and Observer*. The editors are Professor George Mendenhall, M.D., John A. Murphy, M.D., and Edward B. Stevens, M.D. While we are sorry to lose thus soon the company of the talented and sprightly Dr. Blackman, the late editor of the Lancet, we have no fear that the new conductors, evidence of whose powers has heretofore been abundantly given to the profession, will allow the present periodical to lag behind in the rapid progress which now marks medical journalism in this country.

We have also to announce that a happy union has been consummated between the *Peninsular Journal of Medicine* and the *Medical Independent*, of Detroit.

EDITORIAL CHANGE.—We congratulate the subscribers and friends—including ourselves among the latter—of the *Charleston Medical and Surgical Journal* upon the accession of Dr. J. Dickson Bruns to the editorial charge of that valuable periodical. Dr. Bruns is already favorably known to the reading portion of the profession, more especially as the author of an excellently written brochure entitled, "Life; Its Relations, Animal and Mental," published during the past year, and noticed in the January No. of this Journal.

PRIZES AT THE ACADÉMIE DE MÉDECINE FOR 1857.—The Academy prize of 1000 francs, the Portal prize of 1000 francs, the Lefevre prize of 1800 francs, and the Barbier prize of 3000 francs have neither of them been adjudged this year, either in consequence of want of candidates, or of deficiency in merit in the essays offered. On the other hand, for the Argenteuil sexennial prize of 12,000 francs, for the greatest improvement in the treatment of stricture, during the period from 1850 to 1856, no less than 22 essays have been sent in, so that the committee is obliged to put off its report till next year. The Civrieux prize of 1500 francs, subject, "Nervous vertigo," has been adjudged to M. Max Simon; the first Capuron prize of 1000 francs, subject, "Sudden death in the puerperal state," has been adjudged to M. Mordret; and the second Capuron prize, also of 1000 francs, subject, "Saline mineral waters," has been adjudged to MM. E. Petrequin and Socquet, both professors at Lyons.

AN INDIAN DOCTRINE OF ANIMAL SIGNATURES.—Tigers' flesh is a favorite specific amongst the wandering tribes of the Decan, and large quantities of it are consumed in all diseases where medicine of a healing nature is required. It is also believed to predispose to anger, and swallowed from a motive analogous to that of the running footman who ate hare to make him fleet. There is always sure to be in some corner of the wallet a small bottle or gourd full of tigers'-fat, a sovereign remedy against all the infirmities of old age. The Weyds also carry quantities of jackals'-skins, which they sell to persons who believe them to be very efficacious in curing rheumatism.—*Chow Chow*, by Viscountess Falkland. (*Lancet*, Dec. 19, 1857.)

NATURAL ANÆSTHESIA.—"Starting and looking half round, I saw the lion just in the act of springing upon me. I was upon a little height: he caught my shoulder as he sprang, and we came to the ground together. Growling horribly close to my ear, he shook me as a terrier does a rat. The shock produced a stupor similar to that which seems to be felt by a mouse after the first shake of the cat. It caused a sort of dreaminess, in which there was no sensation of pain nor feeling of terror, though quite conscious of all that was happening. It was like what patients partially under the influence of chloroform describe, who see all the operation but feel not the knife. This singular condition was not the result of any mental process. The shake annihilated fear, and allowed no sense of horror in looking around at the beast. This peculiar state is probably produced in all animals killed by the carnivora; and, if so, is a merciful provision by our benevolent Creator for lessening the pain of death."—*Livingstone's Travels.*

HIPPOPHAGY.—The following characteristic advertisement appeared in the *Courier de Saone et Loire*:—"M. Parent, knacker, informs connoisseurs that from this date to the 8th of May, 1858, he offers horse-flesh, of the best quality only, at the following prices: shoulder, rump-steak, and sirloin, at twenty cents the kilogramme; the chines at reduced prices. It is understood that at this price the weight of bone is included."

QUARANTINE CONVENTION.—The Commissioners appointed by the Quarantine Convention, which was held in this city last May, met in the Hall of the College of Physicians, on Thursday afternoon last, to provide for the assembling of another Convention this year. This commission consisted of the officers and one delegate from each of the States represented in the late convention. A number of the gentlemen were present, and letters from others were read, expressing their inability to attend, but their earnest desire for another Convention.

After certain preliminaries, it was resolved to assemble another Convention in Baltimore, on Thursday, the 29th of April ensuing, at 10 o'clock A.M. We learn, also, that delegates will be invited from the Municipal Corporations, Chambers of Commerce, Boards of Trade, Boards of Health, and such Medical Societies in each of the seaboard cities as may be selected by the Executive Committee.

The necessary arrangements for the call of the Convention were committed to an Executive Committee, consisting of Drs. Jewell, Hartshorne, and Biddle, of our city, and Drs. Kemp and Steiner, of Baltimore.

From the deep interest felt in this subject last year, and the great number that have since signified their appreciation of the important questions involved, and their desire to be present at the next Convention, an unusually large delegation may be expected.

The *circular* has not yet reached us.

Bi-Monthly Bibliographical Record.

AMERICAN.

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A Manual of Medical Diagnosis; being an Analysis of the Signs and Symptoms of Disease. By A. W. Barclay, M.D., F.R.C.P., etc. Reprinted by Blanchard & Lea: Philadelphia, 1858. 8vo., pp. 423.

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NORTH AMERICAN

MEDICO-CHIRURGICAL REVIEW.

MAY, 1858.

Analytical and Critical Reviews.

Art. I.—*A Manual of Medical Diagnosis; being an Analysis of the Signs and Symptoms of Disease.* By A. W. Barclay, M.D., Cantab. et Edin., Fellow of the Royal College of Physicians, Assistant Physician to St. George's Hospital, etc. etc. Philadelphia: Blanchard & Lea, 1858, pp. 423, 8vo.

The medical literature of England and America is poor in works on Diagnosis. In this respect it suffers by a comparison with that of France, which, on the contrary, abounds in works of this kind. The first systematic treatise on the subject, to which the medical public of this country had access, was in the shape of a translation from the French of Martinet's "*Manuel de Clinique Médicale.*"* The next, and the only original English production, before the appearance of the one which is soon to claim a notice at our hands, is that by Marshall Hall, entitled "The Principles of Diagnosis," two editions of which were brought out on this side of the Atlantic; the second appearing in 1835. The third treatise was a translation from the German of "Schill's Outlines of Pathological Semeiology," republished, from the English edition, in Bell's Select Medical Library, (1841.)

In France, the improvement in medical education, which followed the new organization of the schools, brought about by the Revolution of 1789, was evince in a greater attention to diagnosis, in connection with, or, rather, as an integral part of medical and surgical clinics. From the date (1808) of Landré Beauvais' work to the present time, we have to record the names of Double, Martinet, Rostan, Piorry, and Raciborski, as authors of treatises on diagnosis, or on diagnosis and prognosis, of various degrees of size and merit.* The works on the diagnosis of particular classes of disease, as of the heart and respiratory organs, either separate, or conjoined with other parts of their pathology and treatment, are still more numerous since Laennec led the way in this department. In some French treatises on pathology, the subject of diagnosis occupies a considerable portion of the entire work. Thus, for example, in the *Traité Elementaire de Pathologie Interne*, by MM. Hardy and Behier, five hundred pages of the first volume are taken up with the rules of diagnosis proper and of prognosis, and their detailed application to Semeiology. Chomel devotes three-fifths of his *Pathologie Générale* to the department of diagnosis. Among American writers, Dr. A. Stillé gives deserved prominence to diagnosis in his work on Pathology.

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* The title of the translation was somewhat different from this. Our copy is mislaid, and we cannot give its date, which, we think, was 1826.

If poverty implies want, and, at the same time, an eager desire for relief, then ought medical readers in the English language, on both sides of the Atlantic, to be grateful for the present volume by Doctor Barclay, which, in its structure and details, is of such a nature as to minister to their necessities. Were we required to indicate the greatest deficiency in the practice of medicine in these United States, we should be obliged to say hasty and imperfect diagnosis. Nor can it well be otherwise under the neglect of regular and systematic teaching of pathology, of which diagnosis forms so important a division. We scarcely need a stronger proof of the neglect of a thing than ignorance of its relations to other things; and by this rule it will be found that diagnosis is not generally known or admitted to be an integral part of pathology; and in close relation with a knowledge of the material and morbid changes in the structure of the organs, another branch of pathology, known under the title of morbid or pathological anatomy. Examination of the changes of structure affords an invaluable confirmation or correction of our diagnosis, and hence the propriety of an author cited above, Marshall Hall, declaring, in the very opening of his work on diagnosis, that one of its sources is morbid anatomy. To the study of this latter, he thinks, we are principally indebted for the recent progress, and, indeed, for all that is solid in medical science. But on this point we need not dilate, after the full expression of our views in the initial article of this journal for January last. The other and third division of pathology, viz. etiology, is often spoken of among us as a distinct branch. Demanding, as it does, an inquiry into the circumstances or the causes under which disease is produced and developed, and assumes certain characters, its relations to diagnosis become sufficiently evident.

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* Those by Double, Rostan, and Piorry are, each, in three volumes.

It is generally conceded that correct diagnosis furnishes the only sure indications for the safety if not success of therapeutical treatment; and if this be so, we cannot say much for the probabilities of successful results in American practice. We can hardly be expected, in a spirit of self-condemnation, to quote approvingly the maxim of Hippocrates: "*Qui ad cognoscendum sufficit medicus, ad sanandum etiam sufficit;*" or the words of Baglivi, to the same purport: "*Qui benê judicat, benê curat.*" We may endeavor, indeed, to find consolation for our shortcomings in this matter, by saying, that a very minute diagnosis would often seem, as in the case of French and other physicians on the continent of Europe, to be followed by, if it does not absolutely lead to, inert practice; while we, even although we do make a very hurried and crude examination of the symptoms of disease, and often mistake the seat of the lesion, give remedies with a free hand, and produce marked effects. If energy of treatment be a measure of success in the contest with disease, we might claim superiority over the learned and the accurate in diagnosis; but it must be admitted, that a fortress is not driven to surrender, nor an enemy defeated in the field of battle, by the mere expenditure of a large amount of powder and projectiles fired off at random, or in the air; but, rather, by the choice of distance and correctness of aim, before the guns, great and small, are discharged. May not our heroic modes of treatment of diseases, as we sometimes boastfully term them, be compared to the knock-down style of argument, which, though very striking and very forcible, is not commonly regarded as the most logical or convincing, especially if it have been practiced on the wrong person? The patient who receives a hundred grains of calomel into his stomach in the course of a few days, for supposed hepatitis, when, in fact, he is laboring under pneumonia, will not be particularly cheered by learning that, under a mistaken diagnosis, he has been the subject of a very energetic treatment, and has exhibited considerable powers of endurance. Nor will another have cause for gratulation at having been bled to syncope for hemoptysis, and bled largely again on the recurrence of the hemorrhage, under a belief, on the part of his medical adviser, that it is a primary disease, when a careful diagnosis would have shown it to be a symptom of tuberculous formation in the upper lobes of the lungs. Gradually increasing debility and emaciation, with loss of appetite and impaired digestion, may suggest to the superficial observer a call for tonics and stimulants and a rich diet, whose views and practice would be not a little modified were he to carry out his diagnostic investigations, and make the discovery that he has to deal with a case of albuminuria. A female complains to us that she is dyspeptic and nervous, and easily fatigued after slight exercise, and perhaps she may timidly add that she has frequent calls to urinate. Shall we put her on a course of alkalies, and nervines, and tonics, and special diuretics? Such things are not unfrequently done, but with only slight and transient benefit, until more careful inquiries are made by a person who is intent on obtaining a full diagnosis, and who suggests a relaxation and partial prolapse of the uterus, which, after permission granted, he verifies. A treatment indicated by the diagnosis soon restores this woman to comfort, and after awhile to health, and ability to take a full measure of exercise. We shall not multiply examples to the same purport, but proceed to notice analytically the Manual of Doctor Barclay.

The author, in a short preface, while he acknowledges the success with which diagnosis is cultivated on the continent of Europe, cannot refrain from coupling with this praise a censure for inefficient practice by the same parties. We have just now touched on this point, and we would ask, without further argument, whether it has been settled by medical statistics. We are not aware that it has been; and, in the interim, we may be allowed to doubt the validity of the judgment, even at the risk of our being accused of want of patriotism, for the American plea is the same as the English one. In a full introduction we are told that—

> "All true diagnosis is ultimately based upon inductions separately framed out of clinical and pathological investigations and experiments. By careful and repeated observation, we have succeeded, with every appearance of truth, in associating certain phenomena observed during life with particular lesions found after death; and these form the first step in our progress. Sound principles have advanced exactly in proportion to the number and the accuracy of these conclusions, because there are many conditions which we are not yet, and perhaps never shall be able, to associate with any appreciable change in structure; and to them we must apply by inference the truths which have been taught in other instances by direct observation. In so far as we are able correctly to interpret symptoms, and to trace out in connection with them a real change of structure or of function which affords an adequate explanation of their presence, in so far are we prepared to form a correct diagnosis. It is not the province of this branch of study to elucidate the *modus operandi* of the change; but, assuming these principles as true, our especial work is to learn to group symptoms together, and to analyze them separately in such a manner that we may be able to apply to them a scheme already supplied to our hand, which shall in some way account for their existence. It is by the nature of this assumption that rational medicine is distinguished from empiricism. The latter equally seeks to group symptoms together, and to assign to each group the most suitable remedies; but the theory or scheme which it furnishes is not based on scientific principles. In the application of the theory to the case under observation, the two are exactly analogous. A comparison is to be in-

stituted between the probable results of the supposed malady and those presented by the particular case, and their correspondence serves for the verification of the hypothesis. In short, it is the deductive process of reasoning applied to the elucidation of morbid phenomena. We gather together in the best manner we can the fragmentary evidence of symptoms, and we apply to it the known laws of causation taught by the theory of disease." P. 21.

The correctness with which diagnosis is performed depends on a variety of circumstances; the amount of evidence obtained by methodical investigation, or assigning of the true value to each portion of the evidence, especially if the group of symptoms be of a very complex character, and an accurate knowledge of the theory of disease. While abbreviating the argument we use nearly the words of the author. From these considerations, he goes on to say, it must be evident that the more numerous and the more simple the symptoms presented to our notice, the more certain must be our diagnosis. Attention to one symptom only cannot lead to truth, since the causes of its production may be various; but when a greater number are considered, and are found to harmonize together, the possibility of the whole group being produced by one or other of the several causes becomes, necessarily, very greatly diminished. A first examination does not always suffice for our determining the true value of the symptoms or the precise character of the disease,—not only on account of possible oversight on our part, but, also, of the disease not having fully developed itself. Another point must also be kept in view in diagnosis. Diseased action in the body is very complex, and the phenomena present may not be all reducible to the results of one form of disease or the morbid condition of one set of organs; it may, on the contrary, be compounded of the effects of several causes acting together. Circumstances concomitant with the symptoms, which may seem to point clearly to a particular condition, we will suppose inflammation, of an organ, are not to be overlooked, such as the evidences of strength or weakness, increased or depressed vitality. Diagnosis is not meant to furnish us with abstract propositions, but to be an aid to us in restoring the patient, who is the subject of our investigation, to health.

The first chapter of the volume before us treats of the method of diagnosis, the history of the case under examination, the narrative of previous symptoms, arrangement of existing phenomena, plan of carrying on the investigation, the necessity of a classification of diseases to diagnosis, and a table of diseases. The history naturally divides itself into two parts: the report of the patient himself, or of his friends and attendants, of what happened before he was seen by the physician; and the phenomena actually observed at the time of examination. The same distinction must be made between events occurring in the absence of the observer, and those noted at any subsequent visit. The previous history is often of great importance; it ought to commence with the very first deviation from health, in so far as the sensations and functions of the patient are concerned, and it ought to give a connected account of the changes which have subsequently transpired. This account is of itself sometimes sufficient to point out the nature of the malady.

> "This preliminary investigation leads to the association of symptoms according to their order of sequence, and we must be careful, by observing them from another point of view, to correct any false impression to which it may have given rise. While, therefore, we follow the patient telling his own case in his own way, it is quite essential that we should make a subsequent and independent investigation of existing symptoms according to some systematic course, which shall have the effect of ranging them in such scientific groups as may most readily and naturally lead to the detection of the cause which best accounts for their origin, and most fully satisfies all the requirements of the case."

In seeking for such an arrangement, there are two classes of indications, the general and the local; but these two are so inextricably mingled together, that no more can be done than merely to adopt, as far as possible, the general indications first and the special indications afterward. A plan which the author deems best adapted for obtaining the information required is now given. In a similar order he discusses the diseases of which the plan furnished the indications, and with this view he introduces the classification which he believes to be most serviceable, and which he follows in the remaining or chief portion of the volume.

The duration and sequence of phenomena constitute the subjects of another chapter, under the heads of division of diseases into acute and chronic; long ailment; pain, in reference to duration; order of sequence; and established course of disease.

Chapter III. is on the "General Condition of the Patient." It treats of objective and subjective phenomena; general symptoms; skin; pulse; tongue; bowels and kidneys; thirst and hunger; appearance; position or posture; sensations; particular signs.

> "Objective phenomena, in their relation to a general state, are those changes in the condition of vital functions of which the observer becomes conscious by his own perceptions. * * * * As independent of the sensations or imagination of the patient, this class of phenomena is less under the control of his volition; and, therefore, less liable to be simulated or exaggerated.
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> "Subjective phenomena have special reference to the sensations of the patient; they express, to a certain extent, his consciousness of general derangement of vital functions; but their more direct tendency is to point out the particular function which is disturbed, and hence the particular organ or portion of the body where disease is located. The two classes are, in a great measure, inseparable. They may be divided into the four following groups:—

"1. General symptoms, as pertaining to—
  a. Temperature and dryness of skin;
  b. Fulness and quickness of pulse;
  c. Appearance of the tongue;
  d. State of bowels and kidneys;
  e. Desire for food and drink.

"It is indispensable to a correct result, that the whole of these should be always taken together, as the indications derived from one source serve to correct those drawn from another, and any one of them is valueless as standing alone.

"2. The general appearance of the patient:—
  a. Size, including emaciation, and increase of bulk, whether general or local;
  b. Aspect of face, and expression;
  c. Changes of color of skin, general and local.

"3. His position, or posture:—
  a. In bed; the manner of lying—on the back, on either side; quiet, restless, etc.
  b. Out of bed; posture, gait, stiffness or loss of power of limbs.

"4. The sensations of the patient."

Pertinent remarks follow on the several points included in these groups, inculcating sound lessons for careful observation and inquiry at the bedside of the patient. To the student they are full of monition; to the hurrying routine practitioner, full of rebuke. Then come particular indications derived from each group in succession. In the first we have the skin, the pulse, the tongue, the character of the stools, the character of the urine, the various conditions of the appetite, thirst. The particular indications in the second group are derived from emaciation; remarkable increase of bulk; the aspect, which is full of significance; expression; alteration of color. The more important of the particular indications from group third are, positions in bed, posture, and gait. Indirect but far from unimportant indications are furnished from the fourth group, viz.:—

"*a.* The contrast in genuine cholera between the corpse-like coldness of the body, and the sensation of heat with which the patient is oppressed; in diarrhœa there is generally chilliness.

"*b.* As a sensation of an opposite kind, may be mentioned the common complaint of chilliness in fever, when the skin is burning hot.

"*c.* The sensations of the hypochondriac are opposed alike to the evidence of the senses and the conclusions of reason.

"*d.* A patient's complaint of want of sleep is almost certain to be exaggerated: the report of the nurse or attendant can alone be relied on.

"*e.* The sympathetic pains form an important group. Thus, pain of the right shoulder may proceed from disease in the liver; pain of the sacrum, from disease of the uterus; of the thigh and testicle, from nephritis or nephralgia; of the knee, from disease of the hip; of the meatus, from stone in the bladder, etc.

"*f.* Complaints of pain are often exaggerated in persons of nervous susceptibility."

It will have been seen, that some time and much attention ought to be given by the physician to an observation of the general condition of his patient, as elucidated by certain symptoms and signs, before he proceeds to a special investigation of the direct nature and causes of the disease. For this purpose, a rapid survey is to be made of the different organs, while examining more closely any one in which evidence is given of an abnormal state, by the sensations of the patient or by facts elicited during an inquiry into the history of the case. But we find in a large class of diseases that the abnormal sensations and disturbance referred to in one or more organs are not always to be received as evidences of positive lesion or alarming functional derangement; but rather of that general disturbance of the entire economy which are known under the designation of fever. The diagnosis of "Febrile Diseases" is opened to us in Chapter IV. under three divisions:—In the first of these the author speaks of a general febrile state—fevers, continued fevers, epidemics, cutaneous spots, subdivisions, complications, remittent fever, influenza, epidemic cholera and its relation to diarrhœa. Division second gives eruptive fevers, measles, scarlatina, varioloid, erysipelas; and division third intermittent fevers.

It is mentioned, as a matter of surprise, "how great a similarity all cases of fever have to each other for a given time and in a given place; and how much they differ from cases occurring at another time or in another locality." Among the modes of division of fevers "is that obtained from the presence and absence of cutaneous eruption and its special characters." Having described the three varieties of the true fever-spots, each of which may be mingled with petechiæ, the author says:—"Of this classification it is most important to note that there is no character of disease with spots, of any one of the fevers noticed, that may not have its exact counterpart in a case where there are no spots at all." Another classification is derived from the prominent symptoms which occur simultaneously; and fever is spoken of as fever with head symptoms, fever with chest symptoms, and fever with abdominal symptoms. Complications, symptomatic or simply concomitant, of fever next come up. The author seems to show that in continued (typhus fever) the prominent feature is not inflammatory, although local congestions occur in its course, and, in consequence of the irritation thus caused, a sort of inflammatory action may be induced. In the head, we have, he tells us, delirium, insomnia, unconsciousness, coma, which, as the history of the case shows, are not inflammatory. In the lungs, congestion almost always comes on more or less from position, and especially in those cases where the blood is most altered in character.

The slight acquaintance of the author with remittent fever is exhibited in his telling us:—"It is now very generally believed to be only typhus as modified by atmospheric influences and the condition of the nervous and sanguiferous systems of Europeans residing in tropical latitudes. The same analogy holds with reference to the only fever of this type ever seen among ourselves—infantile remittent." Unless we are greatly mistaken, the countrymen of Dr. Barclay, members of the profession, who are familiar, from long residence in the East and West Indies, with remittent fever, would hold very different language in regard both to its etiology and symptomatology. In the United States we are far from seeing or acknowledging any such affinity between the forms of fevers. This suggests the remark that, although it is becoming the fashion to disparage the annotating of English works by American editors, we believe useful additions might have been made on remittent fever, which is so imperfectly noticed under its diagnostic aspects by the author of the present volume, and also on yellow fever, which is not noticed at all. We must attribute to his imperfect view of the pathology of periodical fevers his separating remittent from intermittent fever, and placing them under different divisions, with eruptive fevers between them. His remarks on the diagnosis of both remittent and intermittent fevers leave unnoticed very important points in the diagnosis of those forms of periodical fever, so alarming in their appearance and often fatal in result, known in this country by the appellation of congestive, and on the continent of Europe by that of pernicious or malignant intermittent and remittent fevers.

Of fevers it is correctly remarked by the author, that "the period of incubation, as it is called, has no distinct character;" but he adds, "During the incursion of the fever, before any cutaneous eruption has appeared, there are certain indications which, more or less definitely, point to what is about to occur. 1. In measles it is attended with coryza. 2. In scarlatina there is sore throat, and the appearance of the tongue itself is peculiar. 3. In varioloid eruptions pain in the back is frequent. 4. Erysipelas is not marked by any special prodromata; there is a general sense of malaise, sometimes sore throat, and not unfrequently a dull, aching pain, or pricking sensation in the part that is to be attacked." Without undervaluing these indications, there are others overlooked in his enumeration which our own experience—and it has been tolerably large in all the forms of eruptive fevers—has strongly impressed on our memory. We cannot, for example, on the first appearance of the fever tell what face it is to assume, but we can tell with accuracy, in the larger number of cases that we have to deal with an eruptive fever, when we find our patient, especially if a child, laboring under a very hot skin, a pulse excessively frequent and wanting distinctness of beats, great restlessness and delirious agitation attended with somnolency, and for the most part some affection of the throat,—great dryness and rawness, or pain felt in deglutition. The agitation, frequency of pulse, and delirious wanderings, are not by any means in proportion to the fulness or sinister nature of the subsequent eruption. Thus, we have seen all these symptoms, combined with angina, in a greater degree of intensity in some mild cases of varioloid, or modified smallpox, than in what proved to be malignant and fatal ones of variola or primary unmitigated smallpox.

A demurrer will be entered by a large body of both writing and practising physicians against the introduction of epidemic cholera and influenza by the author into the category of febrile diseases, which latter he speaks of as constituting "a large class into which local disorder, as manifested by symptoms in particular organs, is only secondary and subsidiary to the general disease." In the instance of epidemic cholera, the local symptoms are as persistent and fully marked as they are in pneumonia and in cerebritis and hepatitis, while the fever is much less in cholera than in the phlegmasiæ just specified. In cholera there is not fever enough in the worst cases to allow of its being ranked with febrile diseases; nor are the organic lesions of such a kind as to give rise even to symptomatic fever, as in the phlegmasiæ. The author's chief reasons for the location he has assigned to cholera, are, "on account of the increasing conviction that it is one of the acute blood diseases, and the evident febrile reaction after recovery from the stage of collapse."

The volume before us contains a valuable chapter (V.) on rheumatism and gout, in reference to the diagnosis of these diseases, both separately and comparatively with each other. In relation to that of one division of the first mentioned, we read:—"There is little practical difficulty in recognizing a case of acute rheumatism; we have only to distinguish it from gout and from the inflammation of the joints attending on secondary deposit, and their diagnosis must be more fully considered in subsequent sections." Allusion is made to the researches of modern times which "have gradually led to the discovery of an important element in gout—the presence of an excess of uric acid." The author might as well, in this connection, have spoken of the kindred nature of gout and lithiasis, or the morbid secretory function of the kidney by which this organ gives issue to large quantities of lithic or uric acid.

We do not stop to criticise the classification of diseases adopted by Dr. Barclay, and which he has followed out in arranging his chapters on diagnosis. Classifications or any kind of systematic divisions can never, even in botany or zoology, be perfectly natural; but they must be received as helps to the memory, and as furnishing so many stand-points for farther, and, it may be, more extended observation. We shall, therefore, waive comments on the philosophy of placing chapter VI., on diseases of adventitious origin, after the one on gout and rheumatism, and preceding the chapters on dropsies and hemorrhages. The title of the sixth chapter conveys to the reader a very inadequate idea of its contents. These are thrown into two divisions, the first of which includes poisoning, vegetable, animal, and gaseous, together with syphilis, hydrophobia, glanders, and colica pictonum. We may remark, by the way, that neither in cause, symptoms, or treatment, can any affinity be observed between glanders and colica pictonum. The second division is made up of entozoa, echinococcus, and intestinal worms.

"Chronic blood ailments" constitute the materials, diagnostically considered, of chapter VIII. They are, under the first division, purpura and scurvy, anæmia, chlorosis, cachæmia or cachexia, pyæmia, and secondary deposits. The remarks on purpura and scurvy are very brief. Our knowledge of the first of these diseases has been enlarged by carefully made and recorded observations by German writers, who call it *blutkrankheit*, and the French, *hemophilie*, who give as its scientific cognomen, *hæmorrhagophilia*, or *hæmophilia*. (See *Archives Générales de Médecine*, Aug. 1857.) Touching cachæmia or cachexia, it is remarked, that there is one form which is well defined and of grave import: it is characterized by contamination of the blood with an admixture of pus; pyæmia or pyohæmia. Its probable source in all cases is the lining membrane of the veins, and it is constantly met with under circumstances in which there is no channel by which the pus globules could find their way into the circulation of the system. This disease is marked by fever of an adynamic type, quick, feeble pulse, dry, brown tongue, shivering often intense, followed by copious perspiration. "Cases of pyæmia bear a close analogy in many respects to glanders, and when the primary suppuration cannot be discovered they are somewhat perplexing. A sallow aspect and a peculiar odor of the breath have been both urged as characteristic of the disease; but while they may aid the diagnosis, they cannot be made the principal grounds of discrimination." Connected with this subject is thrombosis and embolia, or blood coagula and obstructions in the heart and blood-vessels, of which separate notice will be taken in another part of this journal.

Depraved Constitutional States is the heading of chapter IX., which has two divisions. 1. Scrofula and tuberculosis, including tabes mesenterica, phthisis, acute and chronic. Tubercles in the peritoneum and tubercles in the brain. 2. Morbid growths of different kinds and on different parts of the body.

The diagnosis of "quasi nervous diseases" is given in chapter X., in the sub-heading of which it is said, in reference to hysteria, that the evidence is almost entirely negative. "As the more frequent forms of hysteria are mere simulation of severe disease, so a regular hysterical paroxysm is, after its fashion, a simulation of epilepsy." Chorea, tetanus and delirium tremens are the other topics considered in this chapter.

Chapter XI. consists, in a few pages, of "a general examination of regions and organs. Then follow twenty-four chapters on the diagnosis of diseases of the brain, spinal cord, paralysis, neuralgia; examination of the chest, modifications of normal breath and voice sounds, and of percussion resonance, superadded sounds in their relation to altered breath and voice sounds; diseases of the respiratory organs; examination of the heart, diseases of the heart, diseases of the blood-vessels; diseases of the mouth and pharynx; examination of the abdomen; diseases of the intestinal canal; of the peritoneum; of the liver, spleen, and pancreas; examination of the urine; diseases of the urinary organs; of the ovaries; of the uterus; of the bones, joints, and muscles; of the skin and cellular tissue.

Restricted as we are to certain limits we can hardly do more than give this brief synopsis, which will serve, however, to convey to the reader an idea of the scope and the number and variety of diagnostic details of Dr. Barclay's volume. It was much wanted, and is full of instruction on a branch of pathology which furnishes we will not say the only, but certainly the chief and the safest, indications for the treatment of disease. Minute criticism might point out errors and omissions; but why should we dwell on these, when there is so much that is valuable and apposite to the wants of the student and practitioner? Were room allowed us for a comprehensive view of the subject, we might express a wish to see, in addition, a description of the aids to diagnosis and prognosis derived from an observation and study of the countenance of the patient, and the expression conveyed by it, as well as by each feature separately considered. One of the many pictures furnished in this way is often reproduced by writers, in describing the closing scene of life, under the title of the hippocratic countenance. From the eyes alone how much may be gathered for the indications of disease! It was well said by Hippocrates, the eyes tell the body's health:—"*Ita valet corpus sicuti valent oculi.*" These organs have been called the mirror of the soul; they are not less the mirror of health. So also of the position and attitudes in disease. They are full of meaning to the searching observer, and furnish material for pronouncing judgment in anticipation of analysis, of which indeed they are not always susceptible. An old nurse who has never gone beyond empirical routine may sometimes utter dicta in reference to the general expression and attitude of the sick which ought not to be unheeded by the young practitioner. Dr. Barclay has glanced at the subject: he will probably on a future occasion give it body and form.

There is yet another topic under the head of diagnosis which requires revision. We allude to the precise meaning or scientific value of the terms symptoms and signs, and of the attempts which have been made to separate them, so that symptoms or symptomatology shall be considered as furnishing the materials for diagnosis, and signs or semeiology or semeiotics, those for prognosis. The former, tell us the disease under which the patient is laboring; the latter, its probable course and its termination in health or in death—(Double—*Semeilogie Générale, ou Traitê des Signes et de leur Valeur dans les Maladies,*)—while they would regard symptoms in the light just described, as rising and increasing with the lesion and only disappearing with this latter; and signs as the consequences deduced from the symptoms. A symptom may be spoken of as a good or a bad sign; but we cannot invert the proposition and say of a sign that it is a bad symptom. With Fernel we can say,—"*Omne symptoma signum est, non tamen omne signum symptoma.*" Celsus uses the word signs (*signa*) in connection with and as furnishing elements for prognosis. Baglivi employs the word with the same signification. We cannot speak of the return of appetite as a symptom of disease; but we can with entire accuracy hail it as a good sign. Involuntary discharges of fæces and urine is a symptom of a loss of innervation and of muscular debility; but in low fevers it is an alarming if not a fatal sign.

In conclusion: when looking at the symptoms of cerebral dyspepsia and the morbid distaste for sound medical literature and fundamental principles, accompanied with a relish for every empirical scrap and condiment, so prevalent throughout the land, we shall certainly hail, as a good sign, the favorable reception and careful study of Dr. Barclay's work on Medical Diagnosis.

ART. II.—*Handbuch der Speciallen Pathologie und Therapie.* Bearbeitet von Dr. BAMBERGER, in Vien.; Prof. CHIARI, in Prag.; Dr. FALCK, in Marburg; Prof. GRIESINGER, in Stuttgart; Prof. HASSE, in Heidelberg; Prof. HEBRA, in Vien.; Prof. HEUSINGER, in Marburg; Prof. LEBERT, in Zurich; Prof. PITHA, in Prag.; Dr. SIMON, in Hamburg; Dr. STIEBEL, in Frankfurt a M.; Dr. TRAUBE, in Berlin; Prof. R. VIRCHOW, in Wurzburg; Prof. J. VOGEL, in Giessen; Prof. WINTRICH, in

Erlangen. Redigirt von RUD. VIRCHOW, Prof. der Medicin in Wurzburg. Erlangen, 1854. Erste Bande.

A Manual of Special Pathology and Therapeutics; Contributed by Dr. BAMBERGER, of Vienna, and a number of Professors and Doctors. Edited by Professor VIRCHOW. Erlangen, 1854. Volume First.

WERE it our intention to pass in review the contents of this handbook, so called, but which, when completed, may be more properly spoken of as an arm-full of volumes—a Library of Practical Medicine, we should apprise our readers that the sixth, and, as we are led to believe, the last volume, is now on our table. This, in common cases, might be supposed to imply that the work had reached its completion; whereas, in fact, the second and third volumes have yet to be written. Perhaps they have been issued since the date of the sixth, which is of 1855, but as yet they have not reached us. Even taking the work as we find it—incomplete, there is abundant material from which, did time and space permit, we would gladly draw for the edification of our readers. The arrangement of subjects and the method of handling them exhibit a certain degree of freshness, if not of originality, which, though it might not be at once appreciated by the American mind, could scarcely fail to command attention and furnish lessons for profitable imitation.

In our subsequent remarks we shall, for the most part, confine ourselves not only to the first volume of this Manual of Pathology and Special Therapeutics, but, also, to one chapter in it, viz. that on "*Plug-formations and Obturations in the Blood-vessels;*" or, as more technically expressed for the professional ear, *Thrombosis and Embolia*, which will include obstruction and obturation. The subject for a long time, even after it had attracted some notice, was left as a field for conjecture, in which scattered facts were imperfectly seen and still more imperfectly understood: sometimes they were framed into a hypothesis; sometimes regarded, and this was long the opinion of the majority, as anomalous, and the accidental accompaniment, or the immediate effect, of the death-agony. This was the case in a more particular manner with the coagula and clots, more or less changed and organized, which were found in the cavities of the heart. But now, thanks to a more careful and minute study of pathological anatomy, and the observations made in this direction by eminent pathologists, both on the continent of Europe and in England, the whole subject is brought before us with a certain degree of distinctness, and an approach to method, which promise, ere long, to furnish materials for the diagnosis of dangerous morbid states of the organism, and sudden and fatal seizures, that had been previously attributed to wrong causes, or were thought not to be susceptible of explanation.

In our endeavors to justify this favorable view, and to show the practical bearing of the inquiry—for practical, nowadays, is the password, no matter what amount of crude and hasty observation and empiricism it allows to circulate—we shall follow, for the most part, the lead of Professor Virchow, the editor and one of the contributors to the "*Handbuch*," and who is also author of the chapter on which we propose to dwell. The series of essays on the morbid changes of the blood, by Virchow, published in 1856, in Frankfurt, show the progressive steps by which he was led to the establishing what might almost be called a body of doctrine on thrombosis and embolia, and of which he has given a summary in the Handbook of Special Pathology and Therapeutics. Many interesting details—experiments and clinical observations—are recorded in the former of these volumes of essays, which are not introduced into the chapter in the handbook; and, as we are not in possession of the former, we shall be found occasionally turning them to account by the aid of the critical labors of one of our transatlantic contemporaries.*

Virchow's readers are better prepared to understand his account of plug-formations and obstructions in the blood-vessels, by previous chapters on Passive and Active Congestion or Fluxion. He prefaces our immediate theme by a careful bibliography from Bonetus to Tuffnell, in the *Dublin Quarterly Journal*, 1853. We must confess to a feeling of disappointment at not finding, among these authorities, the name of Dr. C. D. Meigs, who was the first in the United States to direct attention to this important matter, through the pages of the *Medical Examiner* for 1849, and of his work on Obstetrics; as, also, in his lectures in the Jefferson Medical College. In a brief historical notice, Virchow tells us that, although the fact of the stagnation and coagulation of the blood in the veins had been long noticed, yet that the attention of medical men seems to have been first formally directed to the occurrence by a physician of Nuremberg, named Walter Coiter, (1572,) and next by Marcus Aurelius Severinus, (1616.) Soon, notwithstanding some objectors, as, for example, Kerkring, it became the received belief that the clots which are so frequently found in the heart and blood-vessels of the dead subject had been, beyond doubt, previously coagulated during life. Thus arose that noted doctrine which took for its stand-point polypi of the heart, and which, in all succeeding times, should be received as a warning example against the hasty application of anatomical facts. Asthma, palpitations, and inflammatory affections of the chest were deemed to be inevitable results of the polypi, which were readily carried far into the vessels. At length, after a long duration of this creed, a reaction, which is very appropriately designated by the author as empirical, took place, and opinions went to the other extreme; so that, in the latter half of the last century, both the Pastas, Andrew and Joseph, spoke always of the blood-clots found in the dead body as a cadaveric phenomenon. It mattered little that Haller and Morgagni, while adverting to the frequent occurrence of cadaveric coagula, spoke, also, of their not seldom occurring through vital processes; and although the example of Hahnemann shows that it is still possible to fall into the error of the sixteenth century even in our own day, yet there prevailed, for a long time, a general prejudice against the possibility of the formation of coagula in the circulating blood of the living body.

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* British and Foreign Medico-Chirurgical Review, July, 1857.

This prejudice derived support from the development of the doctrine of the inflammation of the lining membrane of the heart and blood-vessels. After John Hunter had first explained the arterio-phlebitis, such large additions were made to our knowledge on this subject, that Cruveilhier advanced the bold axiom, that phlebitis governs, or is the key to all pathology. Assuredly pathology was a gainer; but the question began to be asked, how it should happen that inflammation would cause coagulation of the blood,—for Cruveilhier declared that inflammation in general is nothing more than a coagulation of blood in the smaller veins, (*capillar-phlebitis.*) With this view was associated the gradually increasing belief in the exudation-doctrine of inflammation; and it was then said that the obstructing coagulation in the vessel was sometimes an exudation alone, and sometimes a mixture of exudation and blood, as had been in part shown by Cruveilhier. As the belief in the coagulating influence of the exudations from the sides of the vessels on the blood became accredited, there followed what in the preceding century was the received hypothesis of heart polypi, viz. a dyscrasia; an acrid *coagulatorium;* a coagulating principle in the blood; and in some cases a spontaneous formation, in others an exudative inflammation. The starting-point of the inquiry was to determine precisely whence was derived this substance, which must possess, to a certain extent, chemical properties, or to ascertain the peculiar change in the composition of the blood on which the coagulation depends. Thus, we find Piorry extending into a wide generalization the view of Cruveilhier on inflammation of the blood, (*hœmitis,*) which Rokitansky adopted, but with many restrictions; while Paget suggests uramia (urine mixture with the blood) as a cause, at least, of the plug-formations of the pulmonary arteries; and, as had been previously done by Leake and Bouillaud, Engel advanced the opinion of the older Greek physicians, of a fermentative principle in the blood.

While the leading opinions were divided between primary inflammation of the circulatory apparatus, (endocarditis, arteritis, phlebitis,) and primary dyscrasia, a third, the mechanical theory, found supporters in Laennec, Legroux, Bouchut, John Davy, and Gulliver; and it was received by Rokitansky as a probable condition. An admission of the mechanical theory of blood-clot in the blood-vessels does not exclude the question of the composition of the blood, or of a change in the vessel. The formation of a coagulum presupposes a change in the circulation, that is, a mechanical change; and the clot will be formed with more or less ease, according to the series of momenta to which the circulation is subjected. It is clear that the clot is due to the presence of fibrine, and that the former will be less frequent and more imperfect in blood poor in fibrine than when this fluid abounds in fibrine. "I can admit," says the author, "a difference in the dissolved material, through the condensation of which arise the coagulated particles of fibrine; and I can also suppose a greater or less predisposition in the blood crasis to form coagula. We would go further," he adds, "and say, that a change in the composition of the blood, as well as a change in the coats of the vessels, implies an alteration in the molecular attraction between the blood and its containing vessels; and that in this state the crasis, either with or without a change in the vessel, may act as well chemically as mechanically, in the production of the coagulum."

Virchow, after this historical review of opinions, enters directly on his immediate subject, by telling us that the coagulation of the blood within the vessels follows the same laws as when it occurs out of them, while the fluid fibrine will be altered in its mode of aggregation and become solid without the access of atmospherical air. It is converted shortly into a full, soft, and red clot, loosely connected with the coat of the vessel, and which, at the most, may seem to be adherent to it, so that it resembles a coagulum around a projecting substance, an excrescence, or a thread. We call this clot a *blood-plug*, a *thrombus*, and hence designate the state in which it occurs *plug-formation* or *thrombosis*. This change seldom happens in the capillaries. We must look for it in the heart, arteries, and veins, and especially in the second-sized vessels of the two latter. Schultz found that blood which was collected in fresh animal membranes, a portion of the intestines, for example, coagulated more slowly than that in the proper coats of the veins; an experiment which is easily verified by tying the vessels of a living animal. But it is not so clear that the formation of a clot is a sign of the death of the blood, but rather as showing the reciprocal relation of the parts by which the normal state of the blood is longer preserved.

As regards the composition of a thrombus, it may be described as differing from a simple blood coagulum by its distinctly stratiform construction, by its larger per centage of fibrine, and by its containing a greater number of colorless blood globules.

Thrombosis begins either on the coat of the vessel, or in the entire mass of the blood contained in a portion of the vessel. The first is the most common, and hence the complete occlusion of the lumen of the vessel occurs in the smaller number of thrombi. In the heart it is the invariable state; and in the arteries and veins it is the most frequent case. Besides a normal surface, if there be others, (an unusual thing,) as, for instance, a foreign body thrust into the vessel; it is as if a needle or a thread were carried through it; and so are here the abnormal surfaces which retain the first deposit of the clot. In the first of these, from often a very minute beginning, the blood-clot enlarges itself in a laminated fashion, so that it is seen sometimes more globular, sometimes cylindrical, unequal, rough, or villous in form. But the surface of the clots is always smooth, when particular influences are not operative, or when a first deposit is not made through the entire special unevenness of the surface of the vessel. The coagulated fibrine acts here by attraction on the fluid fibrine, in the same manner as we can hasten the coagulation of blood in the veins by the addition of a clot to that in which the coagulating process has not yet begun. (*John Davy, Schroder, Van der Kolk.*) The thrombus gradually grows in this way, so that by projections from the sides of the vessel the lumen of the latter is diminished and an entire obstruction ensues.

An obstructing thrombus naturally takes the form of the vessels in which it is impacted, and according as it is the normal or the reverse state, hollow or cavernous, will the plug be cylindrical, rounded, or branched. Its end toward the heart has a conical roundness, as well in the arteries as in the veins. In this way the plug always enlarges itself. Very commonly it is like what we are accustomed to find in ligature of an artery; that is, it extends from the point of obstruction to the next large collateral vessel. The thrombus itself is not so large at the lower part of the artery as it is at the next collateral branch. In the veins the circumstances are still more various. It shapes itself in obstruction of the right iliac vein as a long plug, commonly extending itself into the cava; but only seldom so in the left iliac, while the situation of the aorta favors a union of the mouths of the vessels. So after a single ligature of a vein at the upper part of the ligated vessel, in common only a smaller thrombus arises, reaching to the next valve; while Virchow obtained an extraordinarily long plug, extending as far as the heart, when he introduced a piece of caoutchouc into the vein and tied this so as to prevent a collapse of the vessels. Very generally it happens that the thrombus, especially of the veins and auricles, after it has more or less filled the lumen at its points of formation, continues beyond their limits, and particularly in the direction of the circulation, so that it gradually grows in a part of the vessels which hitherto had remained free and unobstructed. Large polypoid continuations are thus formed, which extend from the auricular processes into the auricles, and even through the atrioventicular valves into the ventricles. From the ramifications of the veins are formed bulb-like or cylindrical prominences into the main trunk. The author therefore distinguishes—1. The coagula originating on the side of the narrowed vessels; 2. The locally obstructing ones; and 3. The continued or permanent plugs.

After having shown the formation of a thrombus, Virchow next describes the conditions under which it is brought about. These are essentially reducible to two, namely, *congestion of the blood, and the altered molecular attraction between the blood and the surface of the vessels of the part.* He had in a preceding chapter spoken in detail of passive congestion, (*infarction.*) It may be regarded as a slow and interrupted movement of the blood, with, for the most part, a local increase in the quantity of this fluid. A continuance of this state tends more and more to a stasis, a stagnation (*stillstand*) of the blood, and lays the foundation for the coagulation of the fibrinous portion. We can at any spot give rise to its coagulation by an artificial interruption to the course of the blood, even when this fluid is in its natural state, if the interruption is not too suddenly removed. It appears that but a short time is required for the production of a clot in the interior of a vessel.

This obstruction of the circulating blood has been known for a long time, and the doctrines of the older writers on the corruption of the blood, on the conversion of the infarcted fluid into polypi, and finally into acrid, putrid, mucous, atrabilious matter, plainly grew out of such knowledge. The occurrence of thrombosis in ligated vessels; the coagulation in an aneurismal sac and in varices, were surely proofs, showing, beyond doubt, that the stasis or stagnation of the blood sufficed for the production of a coagulum. But the doctrine of the inflammation of the inner coat of the blood-vessels turned attention in an entirely different direction; and without inquiring seriously into the nature of the clot, or solving the question, whether the coagulated blood in an inflamed vessel cannot be accounted as a mechanical obstruction, the new idea of the flow of the exudation on the internal surface of the heart and arteries was adopted.

Virchow alludes to the experiments of Sasse, Bouillaud, Rigot, and Trousseau, Gendrin, and Corneliani, and mentions his having himself performed others of a new and extended series, which, as relates to the veins, have been repeated by Meinel, and to the arteries by Notta. It appears from them that by no kind of irritation or inflammation of the blood-vessels is there caused a coagulable exudation from the inner surface entering into their lumen; and that, for the most part, every exudation from the internal coat remains, and that the internal coat itself may be changed in its nutritive composition. No fluid exudation could be detected in the carefully conducted experiments of putting a double ligature on the vessels. But it seems that, not unfrequently, the internal coat is destroyed, and thus the way is opened for an exudation on the surface, (*Corneliani, Gluge, Luschka;*) so that, when an inflammatory irritation seizes the blood-vessel, in which blood yet flows, a clot of the latter can be formed so soon as the inner coat is penetrated, when also, for instance, through any means there is necrosis of the vessel. This clot acts precisely as globules of quicksilver or a needle in the heart, and as a thread, a piece of metal or of wood in the vessel, whether the surface be smooth or uneven; so that the form of the surface does not seem to be the cause of the formation of the clot, but the adhesion of the blood to an essentially changed structure of the surface.

Notwithstanding the compression exercised by Virchow in his summary account of the subject, we find that we must hereafter content ourselves with presenting the heads of the several propositions which he illustrates by reference to contemporary inquirers and to pathological facts. For these latter we must direct the reader to the original work.

Thrombosis, from passive congestion, may take place, as Virchow states, under the following circumstances:—1. *Obstruction or diminished diameter* (*narrowing of the lumen*) *of the vessels*, as after ligature of a vessel, or from compression of the veins by tumors, extravasation, enlarged uterus, induration of tissue of the liver, kidneys, and lungs, gangrene, tuberculosis, inflammatory hemorrhages. Obstruction in the capillary circulation may have the same effect as a ligature of an artery.

2. *Breach of continuity of the vessel.*—When a vessel is perforated or jagged through a pathological process, a thrombus ensues. From this cause we may have, after labor, an alarming traumatic or a puerperal thrombosis entirely independent of phlebitis.

3. *Dilatation of the vessel and of the heart* is one of the conditions for thrombosis, as in the familiar deposit of an aneurismal sac, the coagula of a varix, plugs in enlarged auricles and partial aneurism of the heart, the globular vegetations of Laennec between the dilated columnæ carneæ of the ventricles and the auricles; finally, the vermicular and nodulated coagula in dilated vascular plexuses, which are met with about the neck of the bladder and the prostate, and in the broad ligaments, and which go to the formation of *veinstones*.

4. *Absolute weakness of the heart's force.—Marasmus.*—Under this head we find most forms which have been spoken of collectively as spontaneous phlebitis. The credit is due to John Davy and Gulliver for being the first to show that a prostrated state of the powers of life and a languid or retarded circulation soon predispose to the formation of a

coagulum. Hasse and Bouchut still more pointedly directed attention to cachexia, and states of chronic disease, besides a variety of other morbid changes, as productive of coagulation of the blood in the veins. This state of debility or of cachexia is denoted by the title of marasmus, in which specific reference to the nerves and blood is not called for.

It ought to be known that the chief ground for thrombosis is an enfeebled condition of the heart's power, which so much the more admits such changes when a local hinderance of another kind, such as obstructive congestion, or gravitation contributes. Virchow designates thrombosis occurring under these circumstances as a *marantic thrombosis,* which is an extremely frequent thing in severe fevers, as typhus, for example, and is a very common complication of other diseases,—pulmonary consumption, ulcerated cancer, chronic affections of the joints. In adopting the idea of phlebitis, it was not sufficiently attended to that the smaller veins are clear of disease, and that the obstruction exists in the larger trunks,—(crural, iliac, cava, jugular, the cerebral sinuses.) *In the majority of cases, the beginning of marantic thrombosis shows itself behind the valves of the veins, at the point where the valve unites with the coat of the vessel.* It appears, therefore, that in a state of marasmus, where in addition to debility of the muscular tissue of the heart, anœmia, and slight atony of the muscular coat of the vessel exist, the valves are frequently unable to meet, which will be intelligible through the feebleness of respiration, and partial obstruction of the vessels of the lungs, impeding the movement of the blood.

Thrombosis from interrupted molecular attraction is next entered on by Virchow.

1. Gangrene is the first specified under this head. Obstruction of the vessels through gangrene, artificially produced, will interrupt the course of the blood in the vessels both to and from the heart, and a narcotic agency will act directly on the blood. But a perforatory destruction of the coat of a vessel, as in ulcerative processes of the lungs, has, also, often caused a coagulation, and without there being an introduction into the blood of such substances by imbibition.

2. *Nutritive obstruction of the vessel, especially the inflammatory.*—This although, less common in the veins than is generally supposed, is still evident in different places. The author has seen, in the superficial veins whose coats were affected through metastatic abscess, especially adjoining purulent collections, a uniformly spread and laminated coagulum form over a circumscribed infiltration.

3. *Contact of the blood with foreign bodies in the coat of the vessel.* A thread introduced into a vessel, as was done by Magendie and Cruveilhier, and, as Virchow saw practiced on a dog, will give rise to com-

plete obstruction of the lumen of the vessel. Some have enjoyed the opportunity of seeing a needle or other pointed body, which had perforated the heart, or a vessel, become lodged there: this was the beginning of a thrombosis. But there is another more singular state of things, viz. a *hemorrhagic thrombosis.*

Virchow states that a thrombus after its formation may be broken up and driven forward with the circulating blood to a remote part of the blood-vessel system where it becomes impacted. He claims to be the first to direct attention to this point in the arteries of the lungs, obstruction of which, through a blood-plug, had been made, a short time before, the subject of investigation by Dubini and Paget: he soon learned that there were analogous plug formations in the arteries of the body at large. Since then, he has published his first essays, (1846 and 1847,) on the transportation of plugs into the blood-vessel system,—a true metastasis. Confirmatory observations have been subsequently made by Doderkein, Ruhle, and Tuffnell, and also by Pioch, (1847,) Cruveilhier, (1849,) and Kirkes, (1852.) On the subject of priority of observation we would say, in the words of our English contemporary already named:—"To Virchow, however, the merit is due, not only of having explained that many cases of obstruction of the pulmonary arteries are the effects of the lodgment of fibrinous plugs carried there from a distance, and having pointed out the places where, and the circumstances under which, the primary coagula are formed; but to him, also, we must accord the priority in the question of the obturation of the systemic arteries, in consequence of the detachment of solid substances from the valves of the left ventricles, &c." (1845.)

As regards the effects of fibrinous clots on the inner surface of the heart and vessels, Virchow made experiments to test, by analogy, this question. He introduced into the veins of animals relatively large and hard bodies, such as caoutchouc, quicksilver, pieces of muscle, fibrinous clot, and a venous thrombus itself, and saw them carried into the circulation. The result was, as Dieffenbach had ascertained in the case of cholera, that the inner surface of the heart was unaffected by the pressure of these foreign bodies, as it was, also, by that of ice. The author draws the conclusion that the plugs formed in the venous blood, in the veins of the larger circulation, (the right heart,) may pass into the pulmonary arteries; and those formed in arterial blood, (pulmonary veins, left heart, and larger arteries,) enter into the arteries of the body, while, finally, those formed in the roots of vena porta, are carried into the ramifications of the vena porta hepatica, where they are locked up.

This would seem to be the opportune moment to make some mention of the observations of Mr. Kirkes in confirmation and elucidation of the position just laid down by Virchow. The paper by Mr. Kirkes* is contained in the *Medico-Chirurgical Transactions* for 1852. He assumes at the outset, as a fact clearly established and generally admitted, that the fibrinous principle of the blood may, under certain circumstances, separate from the circulating fluid during life, and be deposited within the vascular system, especially on the valves of the heart. "The parts of the vascular system within which these transmitted masses of fibrine may be found, will, of course, depend in a great measure, upon whether they proceeded from the right or the left side of the heart. Thus, if they have been detached from either the aortic or mitral valves, they will pass into the blood propelled by the left ventricle into the aorta and its subdivisions, and may be arrested in any of the systemic arteries or their ramifications in the various organs, especially those which, like the brain, spleen, and kidneys, receive large supplies of blood already from the left side of the heart.

"If, on the other hand, the fibrinous masses are derived from the pulmonary or tricuspid valves, the pulmonary artery and its subdivisions within the lungs will necessarily become the primary if not the exclusive seat of their subsequent deposition." A division being thus made, Mr. Kirkes records, first, the remote effects resulting from the separation of fibrinous or analogous deposits from the valves or interior of the left side of the heart; and, secondly, the corresponding effects produced by the detachment of like deposits from the valves or interior of the right side of the heart.

In the first three cases, death seemed to ensue from softening of the brain, consequent on obliteration of one of the main cerebral arteries by a mass of fibrinous material derived directly from warty growths on the left valves of the heart. Of the subjects, two were pale, delicate, and enfeebled females; the third was a man of intemperate habits, and, when admitted into the hospital, he was in a state of extreme emaciation and debility, had sloughs on his back and hemiplegia of the left side. In each of the three cases there was pale softening of the brain; a plug of fibrine obliterating the canal of one of the main cerebral arteries; masses of fibrinous deposit in the kidneys and spleen, and which seemed to be the source of the mischief elsewhere; large warty fibrinous excrescences in the left valves of the heart. Among other judicious observations on this subject, especially in its pathological bearings, Mr. Kirkes makes the following, in reference to partial and temporary paralysis suddenly ensuing in one or more limbs in young persons:—"This morbid condition may be due," he thinks, "to the interruption of a due supply of nutriment to the brain by the temporary plugging up of a principal cerebral artery by fibrine detached from a diseased valve on the left side of the heart. Temporary loss of power in one or more limbs is not an uncommon circumstance in young persons affected with heart-disease."

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* On some of the Principal Effects resulting from the Detachment of Fibrinous Deposits from the Interior of the Heart and their Mixture with the Circulating Blood.

We must not, by any means, suppose that the arterial branches at the base of the brain are "the only arteries in which fibrinous masses, detached from the valves of the left side of the heart and mingled with the stream, may be arrested. In Cases I. and II., coagula were found in the iliac and femoral arteries, and in Case III., in the renal; and in each of these cases coagula were, in all probability, derived from the same source as that which furnished the clot in the middle cerebral artery, namely, the warty masses on the mitral valve."

Mr. Kirkes next proceeds to offer a few observations on some of the effects which smaller portions of fibrine similarly detached, and arrested in minute arterial branches or in capillaries, appear capable of producing. One of these effects seems to be displayed by the singular masses of yellow, fibrinous-looking substance, not uncommonly found in the spleen, kidneys, and other organs, and hitherto described under such names as "capillary phlebitis," "metastasis," or "fibrinous deposits." But the more immediate object of Mr. Kirkes is "to show that these morbid appearances are very commonly associated with valvular disease of the heart, especially with those forms of disease attended with the deposition of fibrinous vegetations on the valves; and that, in the majority of cases, if not in all, they result from the direct transmission of particles of fibrine from the valves of the heart or elsewhere, and their subsequent arrest in the vessels of the parts in which these morbid deposits are found." The author has noted the coincidence of these deposits in the spleen or other parts supplied with blood directly from the left side of the heart, with disease of the valves or of the interior of the left side of the heart, in nineteen cases.

Mr. Kirkes next adverts to a third series of effects which sometimes result from the introduction of fibrinous particles into the circulating blood, namely, the manifestation of phenomena like those indicative of a morbid poison in the blood. A case is detailed illustrating this part of the subject. It was of a healthy-looking boy, but who had been lately badly off and much stinted for food: he was received into St. Bartholomew's Hospital with obscure typhoid symptoms and a petechial eruption on the skin. We have not room for the details of the disease or of the *post-mortem* appearances; but give the conclusions of the author, who says, "The pain on the right groin, with which the attack set in, was rheumatic; then ensued rheumatic inflammation of the mitral and aortic valves, with ulceration of the latter, and deposition of fibrinous deposits on both. From these fibrinous deposits, many of which were loose and easily detached after death, portions had probably separated during life; and, being mingled with the blood, were transmitted with it to all parts of the body; then arrested on the capillary net-works and smaller arteries, they produced the various petechial-looking spots on the skin and most of the serous and mucous surfaces of the body, the buff-colored blotches and streaks, and the solid, fibrinous masses in the kidneys and spleen, while they probably caused the fatal issue of the case by the pressure resulting from the extreme engorgement of the minute vessels of the pia mater and the substance of the brain." Taken in conjunction with others, this case seems to possess great pathological value, as illustrating the serious effects which may result from direct poisoning of the blood, by the products of rheumatic inflammation of the valves of the heart being mingled with it. In the typhoid symptoms noticed during life, and the secondary deposits found after death, the case presents features almost exactly parallel with those ensuing on phlebitis after wounds.

Mr. Kirkes concludes his valuable paper by a notice of the effects which may result from fibrinous deposits from the right valves of the heart. Here the lungs bear the brunt of the secondary mischief, displaying it in coagula in the pulmonary arteries, and various forms of deposit in the pulmonary tissue. We shall probably revert to this subject when we speak of Mr. Paget's paper on the formation of coagula in the pulmonary artery.

We fall back on Virchow, to exhibit his views of the mode of formation of *Embolus.* In contrast with that formed at its point of origin, the primary thrombus, which is made from a coagulum of blood, he designates the clot which has emigrated into another vessel, or more especially a wedged plug, as *embolus;* a distinction which is the more necessary, as it is not merely a thrombus (coagulum) which has been carried into distant vessels, but also other bodies, as, for instance, portions of the degenerated valves of the heart; and, as the author has elsewhere shown more in detail, the wedged plug serves as a point of accretion for new coagula on its surface, so that we generally find an embolus in the interior of a much larger thrombus. The location of the embolus is determined by the size of the detached bodies in relation to the diameter of the vessel. Larger bodies are sooner arrested and impacted in larger branches of vessels; smaller bodies, subsequently, in minuter ramifications. Without being able to say to what degree of minuteness in the size of the vessel these conditions can apply, we know that these bodies may still be contained in the extreme ramifications of the arteries. If, therefore, a solid body has once entered the capillaries, there can be no doubt of its capability of passing them on, so that we must regard the embolus as a leading arterial phenomenon. In general, the embolus is found at the point of bifurcation of an artery, or where the latter, by its numerous ramifications, is quickly diminished in size; the larger plugs generally rest astride, as it were, on the projecting points of bifurcation, while they are, also, in a measure, forced into the descending branches.

The emboli cause, as has been before shown, a partial obliteration (obturation) of the vessel, so that both before and behind them the vessel is open; and in the beginning they lie free in the lumen of the vessel. In both these contingencies they can be less distinguished from the original thrombus, especially when by their loose position, and by the perfectly unaltered state of the wall of the vessel, they indicate a greater duration. This was the reason why Virchow could not accede to the opinion of Baron, Cruveilhier, Paget, and Dubini, on the primary character of most of the plugs in the lungs, and why he here lays an especial weight on the distinction between the general primary obstructing, and the secondary or partial obstructing and emigrating thrombus. The next effect of the embolus is only an extreme diminution of the lumen of the vessel, not its entire obstruction; as few bodies are either in shape or in consistence calculated to adapt themselves entirely to the peculiar lumen of the vessel. It is, therefore, possible that blood can still pass between them and the coat of the vessel; the current of which, according to circumstances, is either increased or diminished,—yet so that, behind the embolus, there is always less blood admitted, and, therefore, there always occurs a stagnation. Very soon new deposits of coagulated blood take place on the circumference of the embolus, as well in consequence of the stagnation as of altered molecular attraction of the blood; and it may occur *that the embolus is entirely enveloped in the thrombus*, still without, on this account, obstructing entirely the lumen of the vessel. When Virchow introduced into the jugular veins of dogs triangular, prismatic pieces of caoutchouc, he found them, after some time, to be inclosed in a coagulated capsule in the pulmonary arteries, yet in such a way that there remained within the lumen of the vessel three small lateral canals.

If we suppose the embolus to be soft, it may be pressed against the walls of the vessel by the *vis a tergo;* or if it be very large, or cylindrical, the interruption of the lumen may be perfect, and an obturation be momentarily caused at the same time. Then that part of the artery situated behind the embolus contracts, if there is sufficient tonicity, and discharges the greater part of its contained blood. Before the embolus a secondary thrombus is formed, as in the application of a ligature, mostly up to the next large collateral vessels. Further details would lead us to a notice of the changes and metamorphoses of thrombus, which are sometimes retrogressive—(*softening, induration, petrifaction, and fatty degeneration;*) and sometimes of a progressive nature—(*organization, formation of areolar tissue, etc.*) In cases of organization, (John Hunter and Zwicky,) on the points of previously entire obstruction, the circulation may be, though imperfectly, re-established. Sometimes a lateral opening of the canal is established, that is, the thrombus adhering closely to one side, while the other part retracts and allows of the circulation. At other times there are formed irregular, or, at least, interrupted adhesions in the course of the vessel and canaliculization in the shape of sinuous degenerations. (Rokitansky.) Finally, we cannot doubt the formation of new vessels (vascularization) in the thrombus. (Stilling.)

Generally there occurs, at the circumference of the thrombus and embolus, a nutritive alteration in the wall which did not previously exist; and this change readily takes on an inflammatory character, as phlebitis and arteritis. The degree of change in the thrombus and embolus is dependent on the chemical and mechanical condition of the plugs, or of the parts from which they were originally formed. Under certain circumstances, as in a septic infection of the body, there may have been added to the original thrombus a certain amount of catalytic substance, which determines those bodies to assume a retrogressive character: in traumatic or puerperal thrombosis the intra-vascular coagula can receive, through contact with the septic surfaces, the germ of internal disintegration. If the embolus originates from a partially ossified valve of the heart, the mechanical irritation of the hard and irregular surface acts very energetically on the wall of the vessel at the point of obstruction. According to the degree of irritation there will be hypertrophy of the vessel, its adhesion to adjoining parts, infiltration of matter, formation of abscesses, and perforation of the wall of the vessel. If the irritation be of a chemical kind, there is a corresponding transformation of neighboring tissues.

Thrombosis of the veins is often so slight as not to excite attention; running its course without any consequences except inflammatory irritation of the walls of the vessels, as in hemorrhoidal tumors and varicose veins. Even in entire obstruction, and in thrombosis of the deeper seated veins, relief is afforded by free anastomosis of the contiguous vessels. Congestion and dilatation of the vessels dependent on this condition, may ultimately give rise to a cyanotic state, and thus enlarge our diagnosis. If the collateral circulation is insufficient, which is especially the case when this class of vessels is itself obstructed, (Cruveilhier,) there sometimes ensues *phlegmasia alba dolens*, or *ascites*. Through a gradual increase of the existing congestion are developed the higher degrees of venous hyperæmia, (*cyanosis,*) which very often rapidly disappears under the exosmosis of serous fluid from the vessels. This phlegmasia dolens in puerperal subjects, arising from an obstruction of the iliac veins, may also be met with in non-puerperal states, such as in phthisical subjects, cancer, and cachexia in general; and lastly it has been received as a general phenomenon.

Serous exudations generally occur in the neighborhood of the capillaries and the roots of the veins, not on the vein itself; and it may therefore happen that the point of exudation is far remote from the thrombus. When the collateral circulation is not re-established, and external irritations are conjoined, the inflammatory irritation may reach that point called *œdema calidum*, and then occurs generally a diffused erysipelas, which terminates in bullæ and purulent infiltrations, (diffused phlegmonous inflammations—pseudo erysipelas,) with diseased states of the neighboring lymphatic glands, and even with gangrenous destruction of the parts, in the shape of white gangrene. These states are most frequently met with in the phlegmasiæ of lying-in women. In some epidemics of erysipelatous puerperal fever we observe, from the beginning, a great tendency to the complication of local erysipelas with thrombosis and dropsy of the parts. Virchow's own experience coincides fully with that of Emmert and Cruveilhier, viz. that gangrene never occurs as a direct consequence of venous obstruction. He has observed cases of thrombosis of the lower extremities, extending to the vena cava inferior, not admitting the idea of collateral circulation, and in which there was nothing anomalous to be observed, except the œdema. He points out some degree of connection between these œdematous obstructions long continued and *elephantiasis.* Lastly, reference is made to the hemorrhages which occur in the highest degree of venous obstruction, especially in thrombosis of the cerebral sinuses, and hyperæmia and œdema of the pia mater. He has met with hemorrhagic infiltration of the subperitoneal and the deeper-seated subcutaneous tissues, also in the muscles and the surrounding areolar tissue, on the lower right side of the abdominal muscles, in a case of typhus in which there was thrombosis of the external iliac, hypogastric, and crural veins; whereas, a more limited thrombosis of the left common iliac vein only produced hemorrhage of the adventitious and subperitoneal tissues over a circumscribed space, in the posterior margin of the superior aperture of the pelvis.

Thrombosis of the Arteries is often a deuteropathic phenomenon, consisting of mortification and ulceration. Very frequently, from the mere fact of meeting with obstruction in the vessels leading to the gangrenous portion, as, for instance, in the lungs, it has been inferred that the obstruction caused the gangrene, but without foundation. The only important forms of thrombus and emboli are those which occur in consequence of the so-called atheromatous processes, (*arterio-sklerosa* of Lobstein.) The obstructions in the arteries, through primary thrombi, are distinguished from the obstruction caused by transported emboli, mainly by the suddenness with which the symptoms manifest themselves in the latter case, and the greater accompanying danger. With the emboli of the arteries on the brain are often associated *apoplectic phenomena*, and in those of the pulmonary artery appearances of *suffocation*. Sudden obturation of the coronary arteries would seem to cause acute paralysis of the heart, and the highest degree of the so-called *angina pectoris*, as may be proved by the application of a ligature on the coronary artery. The author speaks of the detachment of particles from any of the valves of the heart carried to the lower extremities, which is productive of obstruction, increasing sometimes to a great extent.

The next effect of arterial obstruction is ischæmia in union with collateral fluxion. Anæmia, coldness or algor, and diminished volume or collapse, become so great that the parts assume a death-like or cadaverous appearance, the more observable as this state is generally combined with a notable diminution of activity of the functions. The effects of ischæmia of the brain, after tying of the common carotid, have long been known; among these are noticed hemiplegia with or without convulsions, soporose and comatose states, and even death. From obturation by embolic plugs in the branches of the carotid in the brain, a great variety of symptoms has been observed, when not only the completion and rapidity of the circulation, but also the locality of the obturation must be borne in mind. The most common location is at the fossa of Sylvius, and the consequences of the ischæmia are immediately extended to the motor centres, so that the attack on such an occasion is generally very acute, mostly with a prolonged loss of consciousness, in the shape of *apoplexy*.

In obstruction of the arteries of the extremities, the most important symptoms occur on the sensitive nerves. Sometimes the only and yet doubtful symptom is decided neuralgia, which, on account of its lacerating character, is generally designated as simply rheumatic, and which may continue after the vessel has been restored to its former condition. The author has seen a case of cerebral paralysis after obturation, of a year's standing, in which, while the extensors were affected, there was permanent contraction of the flexors. In obturation of the cerebral arteries the sensibility is not affected, while the paralysis is complete.

The relations of the so-called hemorrhagic infarction, as for instance, in the lungs, the spleen, the kidneys, to the obturations of the vessels are not clearly understood.

The highest degree of retrogressive development from vascular obstruction is direct necrosis. After senile gangrene had been traced to arteritis, it had become a dogma that all the forms of gangrene were owing to the interrupted admission of arterial blood. But the experiments of Virchow, in addition to those of Enmert, have proved that senile gangrene depended least on primary obstruction of the arteries. Yet spontaneous gangrene, not specially appearing in advanced life, but as a particular consequence of rheumatic affections, is generally brought on by emboli and endocardial vegetations. This variety is characterized by mummification. It is never dependent on obturation when the nutritive vessels of the part are not affected by the latter.

We may infer, from Virchow's experiments, that local affections following the obturation of a vessel depend much less on the plugging itself than on the chemical and mechanical nature of the plug. The interruption in the courae of the blood in a tolerably large branch of the pulmonary artery, even in one of the trunks supplying a lobe, does not seem to exert any appreciable effect on the parts to which the blood is distributed by this channel, nor on the other lobes of the lungs, nor the rest of the economy. Virchow's experiments further show the formation of a distinct collateral circulation through the bronchial and intercostal arteries after the obturation of the pulmonary artery. A very important experiment on which a large number of pieces of muscle were introduced, exhibits the occurrence of death with all the symptoms of asphyxia, the heart having been found in the diastatic state. The injection of air acts likewise by the impediment it originates to the circulation through the lungs.

The obstructions of the pulmonary artery furnish the most numerous examples of emboli. In seventy-six subjects, examined after death, the author found twenty-nine of emboli of the pulmonary artery and pulmonary veins; and yet we are not able to show their great influence on the general state of the circulation, although we should look for their more frequent occurrence in parts through which the whole circulation is obliged to pass than in the case of obstructions of the arteries of the extremities.

Among the symptoms of the compensating hyperæmia have been noticed different congestions of internal organs, such as of the head, lungs, palpitation, abnormal pulsation, &c.; but the nervous are so blended with the vascular that it is hardly possible to draw a line of distinction between them.

Virchow terminates the chapter, in the *Manual of Special Pathology and Therapeutics*, on plug formations and obstructions of the vessels, by a brief account of the treatment of these morbid states. But, before we avail ourselves of this fact of his labor, it cannot be deemed amiss if we should make some observations on the changes which the coagulated fibrine in the heart and vessels frequently undergoes when left to itself, to be acted on by the blood and the vital forces to which it is subjected. For this purpose we would direct the attention of our readers to an interesting paper, by Mr. Gulliver, "On the softening of fibrine," as found in the twenty-second volume of the *Medico-Chirurgical Transactions*, (1839.) Mr. Gulliver makes a remark of no small practical moment, viz. on the frequency of obstruction of the veins by coagula, and which will we trust be not without its effect in quickening pathological inquirers, in this country, to a more careful and minute search after similar appearances, in their *post-mortem* examinations. Mr. Gulliver tells us, "Although the occasional obstruction of the veins by sanguineous coagula, whether softened or not, has become well known of late years from the labors of the continental pathologists, and particularly in this country [England] from several reports of dissections in the magnificent work of Dr. Bright, as well as from the essays of Mr. Arnott, Dr. George Burrows, and Dr. Copeland, my observations lead me to believe that the affection is not only more frequent than is generally supposed, but more concerned in disease, a circumstance to which my attention was first directed by Dr. Davy. Those who have not been in the habit, when examining dead bodies, of accurately attending to this point, would be surprised at the numerous examples of this condition noted in the register of dissections made under his superintendence at Chatham. The clots were, in most instances, partially whitened and softened in the centre; they were found in the heart, and also adhering to the inner membrane of the aorta; in the veins of the lower limbs, as well as in the cava, portal and renal veins; in the pulmonary vessels, and in the sinuses of the dura mater. They were chiefly observed in subjects who, having long suffered from various chronic maladies, had great prostration of the vital powers and languor of the circulation during the last days of existence; a state which was also remarkable in the cases related in this paper, and which seems more especially favorable to the formation and softening of the clot." Our readers need not be told how entirely these views, including the frequency of the occurrence of obstructing coagula and the part which they so often perform in disease, as well as the condition in which they mostly show themselves, are borne out and confirmed and explained in the masterly summary of Virchow.

Mr. Gulliver's object, in his paper, is to correct the misconceptions of those who believe that the changes in the substance, and especially in the interior of fibrinous clots, are due to the conversion of a portion of them into pus. Fibrinous coagula or concretions do, indeed, when exposed to a blood-heat for forty-eight hours become thoroughly softened, and present the color and consistency of pus, but they are distinguishable from the latter by the size of the globules and other tests, including a more ready putrescency. Softening of the fibrine has been noticed, moreover, without, in some cases, appreciable suppuration in any part of the body. Mr. Gulliver further contends that the purulent-like fluid found in the fibrinous clots of the heart and arteries is essentially distinct from pus, and analogous to, if not identical with, softened fibrine. And also, that the softening of coagulated fibrine is an elementary pathological condition of frequent occurrence, distinct from suppuration, and constituting a considerable proportion of the cases generally denominated suppurative phlebitis. Mr. Gulliver does not, however, deny, but, on the contrary, he has seen frequently the mixture of pus in considerable quantities with the pulpy fibrinous matter; "and, in two instances, some purulent globules were observed, completely insulated in the centre of a clot from the neighboring tissues. But, in both these cases, pus was also detected in the blood; and, when it is considered how frequently this contamination exists, it will not appear surprising that the particles of pus should become entangled in coagula contained in the vessels."

Reference has been made, more than once in our preceding remarks, to the paper of Mr. Paget, "On Obstruction of the Branches of the Pulmonary Artery," (1844,) in the twenty-seventh volume of the *Medico-Chirurgical Transactions.* The author makes an anatomical remark to be remembered, when we speak of pulmonary obstructions, whether congestive or inflammatory:—"From the arrangement of the pulmonary arteries, between which there is no anastamosis, except in their capillaries and smallest branches, it results that whenever the flow of blood through the capillaries of any part of the lung is prevented, there must also be a stagnation of the blood in all the branches from which those capillaries are derived; and in these circumstances the blood coagulates in the vessels and passes through various changes." These conditions are present in several diseases, such as pulmonary apoplexy, the advanced stages of pneumonia, arrested medullary matter in the lungs, which had become softened and entered the blood, and now, together with coagulated blood or fibrine, fills up nearly the branches of the pulmonary artery. The branches of this artery are often blocked up, also, by clots formed during life in those who die with great œdema of the lungs. In some of these cases the coagulation of the blood in the pulmonary artery may be regarded as a secondary phenomenon. But there are other classes of cases in which the formation of similar coagula appears to be a primary disease, or in which, at least, it cannot be regarded as the result of mere obstruction in the capillaries. Independently of other proofs to this effect, stress may be laid on the evident age of the coagula and certain organic changes which they have undergone. In one of the cases, given by Mr. Paget, he mentions its being distinguished by its laminated structure, as if formed by the deposition of successive layers from the wall toward the axis of the artery. This, it will be remembered, is described by Virchow as one of the chief characteristics of a thrombus.

In conclusion, we will now repeat what Virchow has to say respecting the *treatment* of obstruction and obturation of the vessels. This is confined to very narrow limits. We have no means for procuring the restoration of parts, a breaking up and removal of the plug. Surgery has been invoked as yet neither for thrombus nor embolus, and, as a general thing, it could hardly be ventured on. It is only in the various forms of gangrene of the extremities that amputation has been resorted to, with a view of limiting the gangrene, although, as yet, with unfavorable results, for we must wait until the operation can be undertaken with a clear insight into the nature of the circumstances. Chemical discutients, which were supposed to act by favoring the absorption of the fibrine, (nitre, carbonated alkalies,) have, in late times, lost their credit.

The first, best, and most natural termination is an areolar metamorphosis of the thrombus, which, as we have seen in a preceding paragraph, creates a partial restoration of the old canal. Next to this is a seasonable and sufficient return of the collateral circulation. As regards the first indication, it appears that the condition of the wall of the vessel mostly determines the kind of metamorphosis of the thrombus. The more irritated the wall of the vessel, or the greater its subjection to inflammatory irritations, especially if it is altered by putrid or gangrenous processes, the less disposed is the thrombus to a continued organization. We have next to take into consideration the state of the contiguous parts, especially where the vessel has been injured and the thrombus is in immediate contact with secreted and excreted fluids, which reach it by imbibition. Here it is necessary to preserve the utmost cleanliness of the parts, by means of topical bathing and injections; and to maintain the normal secretions by sometimes cooling, sometimes sedative, and sometimes stimulating treatment; to neutralize the septic agencies by chlorinated water, solutions of chloride of lime, diluted solutions of alum, acetate of zinc, and the tannates. In regard to the inflammatory condition of the wall of the vessel, this demands an antiphlogistic treatment, as has been often recommended since the time of Dupuytren. In such circumstances, local abstractions of blood are especially useful in the neighborhood of the obstructed vessel; also, applications of ice or of cold water, and inunctions with mercurial ointment. Conjointly with this treatment, the greatest possible quiet is to be observed, as motion not only interferes with the process of organization, but also causes destruction of the thrombus, the danger of which we have shown in speaking of venous plugs. In embolus of the extremities, the flexed position is the best borne, and favors the transverse dilatation of the vessels above the point of obturation. The regulation of the collateral circulation is the most difficult problem to be solved. There is generally, in the beginning, a collateral fluxion which is opposed by the state of the vessels, and may show itself in this way as active hyperæmia. If this is attended with immediate danger, on account of the magnitude of the difficulty, as is the case in great obstructions of the pulmonary arteries, we are obliged to resort to copious venesections, and to the use of dry and scarifying cups. These latter are especially indicated in cases of obstruction and obturation, which are often developed in anæmic and cachectic states of the system, where loss of blood would be very injurious. In moderate degrees of disease, and in parts reached externally, local depletion by means of leeches and cups will suffice; as, for instance, to the head and nucha, in obstructions of the vessels of the brain and of those of the extremities. These remedies have the advantage of allowing of repetition, and at the same time they prevent venous afflux, which may prove dangerous and favor gangrene.

It seems that cold, by its tonic action on the muscular coat of the vessels, is especially beneficial; its good effects are shown in neuralgia dependent on obturation. Reference is made to a case of obturation of the brachial artery, high up in the arm, in a young woman in the Hospital of Munich, which came under the author's observation, and in which intolerable pain of the hand was mitigated by applications of ice. He cites, also, the case of a patient in the Berlin Charity Hospital, in which there was obstruction of the crural artery, and in which the warm bath aggravated the pain: even touching the warm water produced a pricking sensation, particularly in the great toe, which lasted the whole day. In obturation of the arteries of the brain, cold is very useful for preventing collateral phenomena; especially, in this connection, may mention be made of a case of severe vertigo removed under its use.

It appears that, for a favorable issue of the case, it is better to moderate than to excite the collateral circulation. The general method of treatment, the object of which is to retain the heat in the parts deprived of blood, will consist of cataplasms and fomentations, and an increase of the activity of the circulation by aromatic and other exciting substances; but which have never exhibited satisfactory results unless in the latter stages of the disease. All irritations, which in themselves aid the dilatation of the vessels, fluxionary hyperæmia, lead to obstructions and contribute to the development of gangrene. Confounding spontaneous, or the embolic, with true senile gangrene, has been productive of much mischief. All the remedies which relax the walls of the vessels, and by this means aid in restoring the collateral circulation, act first upon the surface, where the want is not so immediately felt; and they have a very limited effect on the deeper-seated parts in which the more important anastomoses are situated. It is, therefore, better to waive this treatment, and to adopt the antiphlogistic course, at least, at the commencement.

In venous thrombosis, it is often possible to oppose, by local and general remedies, the obstruction of the circulation, or, at least, to diminish it. The best, and, at the same time, very important remedies, are the dietetic, —good, wholesome, easily digested food, slightly stimulating beverages to aid digestion, and often change of place. It is very important to watch the convalescent or the serious chronic cases in this particular. The motive power of the heart and the activity of respiration must be kept up to a certain degree of vigor, if we wish to prevent the plug-formation. But it is necessary, besides, to aid locally by an elevated position of the parts and graduated pressure by bandaging, so as to resist the determination of the blood; then resort to friction, removal of partial compression, etc.

In the traumatic forms of the disease we must endeavor, at the very commencement, to prevent the formation of large thrombi in the veins. It is, therefore, of the utmost importance, in the cases of puerperal patients, especially in the period of epidemic visitations, that the uterus should contract early, and with this view we have recourse to frictions of the abdomen with the hand, the external application of cold, and ergot internally. In operations, we must omit tying the veins, as otherwise we should prevent the discharge of blood from the lower portion of the vein next the wound; and hence it is useful, in venesection, to remove large coagula from the opening of the vein, as they may be increased so as to encroach on the lumen of the vessel.

If there be coagulations in the vascular system, efforts must be made to prevent their spreading, and especially their degenerence into emboli. To attain this object it is desirable to diminish the *vis a tergo;* but as in venous obstructions this would not so directly answer our purpose, we must endeavor to gain our end by local applications, and, especially, bandages, and at the same time enjoin the greatest possible quiet. The extremities are best supported by a sling.

Different from the cases hitherto considered are coagulations of the arterial blood, especially in the valves. Here the *vis a tergo* must be diminished, the contractile power relaxed, and the circulation brought down. Here, also, is a mild, cooling, and antiphlogistic treatment most appropriate; as by the administration of digitalis, nitrate of potash, cream of tartar, *aqua lauro-cerasus*, or hydrocyanic acid, acids in general, and cooling laxatives. If we are convinced that we can act antiphlogistically by the use of the neutral salts, this treatment should have the preference.

Finally, there occurs a series of symptomatic phenomena, mostly in arterial obstructions and obturations. To these belong more particularly those of a nervous nature, which often require special consideration. In cases of great pain it is necessary to have recourse to therapeutical means, as its continuance weakens the patient and interferes with his sleep. If local antiphlogistic remedies are insufficient, we have recourse to narcotics, such as opium, lactucarium, and, under certain circumstances, chloroform. As relates to this last-mentioned article, we consider ourselves justified in demurring to the recommendation of its use by the author, except in very rare and extreme cases, and in which the disease does not arise from obstructions in the heart or the pulmonary circulation. Fevers and gastric derangements open out special indications. The frequent occurrence of debility has given vogue to the tonic and stimulating treatment, by the use of bark, mineral acids, and wine; beyond, in fact, what it deserves in the early stage of the disease. In fever, from the absorption of septic substances, the treatment will vary with the circumstances of the case.

Our readers have now opened to them a wide, and, for the most part, a new field for pathological inquiry, and for novel applications of therapeutical agents. We may expect, in consequence, to find our pages enriched hereafter by many interesting details, from correspondents, bearing on the several points with which we have endeavored to make them acquainted.*

We must reserve for a future occasion a view of the connection between the theme just discussed and rheumatism, as set forth by Virchow.

ART. III.—*The Principles and Practice of Obstetrics; Including the Treatment of Chronic Inflammation of the Uterus, considered as a Frequent Cause of Abortion.* By HENRY MILLER, M.D., Professor of Obstetric Medicine in the Medical Department of the University of Louisville. With illustrations on wood. 8vo., pp. 620. Philadelphia, 1858. Blanchard & Lea.

NEARLY nine years ago, Dr. Miller published, at Louisville, a treatise on human parturition, which may be considered, to some extent, as the nucleus of the present work. That treatise, though fragmentary and confessedly incomplete, exhibited, nevertheless, not merely an intimacy with the several subjects discussed in it, but, in respect to most of them, an originality of thought, and throughout, a disregard of mere authority in reference to such questions as are open to investigation alike to every one engaged in the active duties of obstetrical practice. It was, in consequence, most favorably received, and a desire expressed that Dr. Miller might be induced to carry out and perfect the plan, somewhat roughly sketched in the publication referred to, by the preparation of a regular and complete treatise on the theory and practice of midwifery. This task he has at length accomplished, by the publication of the work before us; the execution of which confirms the most favorable of the anticipations based upon the character of the former treatise. We find in it the same disposition manifested on the part of the author, to employ his own faculties and opportunities for observation in the investigation of every question of doctrine, and his own judgment, enlightened and confirmed by the results of his personal experience, compared with those of the recorded experience of others, in determining correct rules of practice. The same fearless announcement of his own conclusions, when convinced of their accuracy, however much they may be at variance with received opinions and practical dogmas, or opposed to the cherished views of some would-be obstetrical autocrat. In the reasons—always plausible and often conclusive—adduced by Dr. Miller in evidence of the correctness of his dissent, on any given question, from the teachings of distinguished obstetricians, he evinces far more ardor in the cause of truth than desire to establish a fictitious title to originality in either doctrine or practice.

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* A laudable attempt, in this line, has been made already by Dr. Marcus Dana, in the Medical Examiner for 1850, entitled "Observations on Endo-Cardial Coagula." Dr. Meigs, in his Observations, to which reference was made in a preceding page, has chiefly directed attention to the occurrence of heart-clots after hemorrhages in females, during their puerperal state.

The foregoing remarks are made in perfectly good faith. We believe them to be strictly applicable to the work before us. At the same time, we should not wish to be considered as unduly exalting its merits, or as affecting to see in it neither defect, fault, nor omission. The treatise of Dr. Miller is certainly far from being complete or perfect. It fails, in the first place, to cover the entire ground demanded by its title: more than one subject intimately connected with the theory and practice of obstetrics being entirely omitted; while others, though treated of, have not that prominence and fulness of exposition awarded to them which their importance demands. We object, also, to the arrangement of the work, as one not well adapted for the instruction of the student, nor for easy reference, as occasion may demand, on the part of the practitioner. It is true, the arrangement of subjects being, in a good degree, that in which they usually occur in practice, or, at least, in accordance with their most ordinary clinical relationship, it may, in some respects have its advantages, especially in the case of the advanced student and young practitioner, who will be willing to sit down to the study of the treatise as a whole, rather than to the study of either of the questions of theory or practice, embraced in the general subject, individually, or detached from their connections. The style of Dr. Miller, though it has but slight claims to elegance or purity, is, nevertheless, sufficiently clear and vigorous; on more than one occasion, however, it is disfigured by modes of expression which ought to be carefully excluded from a grave didactic treatise on a subject strictly scientific; while, occasionally, the tone indulged in by the author, when controverting the opinions of others on particular questions, is marked by a degree of apparent harshness, calculated to mislead the reader into a belief that the opinions objected to have been attacked as much on account of those who uphold them as from any real or supposed error in the opinions themselves. Still, with all these defects and blemishes—and the list might probably be enlarged—we pronounce the work of Dr. Miller an able and valuable one,—one destined to assume a high and permanent rank among the standard American treatises on the theory and practice of midwifery. It is not only generally full, correct, clear, and distinct in its teachings, but it presents a manly vigor and directness in the handling of all the questions embraced within its general subject, that cannot fail to impart themselves, in some extent, at least, to its readers; inducing them, in their turn, to examine, think, and decide for themselves—to seek for truth where alone truth can be found—in the field of cautious observation and carefully studied experience; not, however, forgetting the guidance, whether suggestive or by way of comparison, of such facts as have been carefully recorded by reliable observers.

It is not necessary that we should enter into an examination of the first portion of the treatise, or that devoted to a description of the physical structure of the pelvis, its regions, measurements, planes, and axes; the anatomical structure and normal functions of the female sexual organs. Suffice it to say, that these subjects are treated with that fulness and accuracy which their important bearing upon the doctrines and practice of obstetrics demand. Without an intimate acquaintance with every particular included in these preliminary chapters, it is impossible to understand the first principles of obstetrical science, or to become a successful practitioner. Without such acquaintance it is in vain to attempt the safe conduct of even the simplest case of natural labor.

For the anatomical description of the female pelvis and organs of generation, and their obstetrical relations, the author acknowledges his indebtedness to the recent work of M. Dubois, of Paris. It was scarcely possible to obtain from any other source a more full, clear, correct, and, at the same time, concise account of these subjects. It is precision and accuracy that are to be aimed at in mere anatomical descriptions: in our account of physical structure—form, regions, diameters, planes, and axes, and the relation which these bear to each other—originality, even if it were attainable, is of secondary importance.

The preliminary matter referred to occupies the first two chapters of the treatise. It is well and copiously illustrated by excellent drawings and diagrams.

The third chapter is devoted to an account of the clinical exploration of the female sexual organs, not simply in reference to the question as to the existence or non-existence of pregnancy,—which is but slightly touched upon,—but for the purpose of detecting the presence of any deviation in the position of the uterus, or any abnormal condition of its tissues or annexes. The entire subject is very ably treated; but we very much doubt the advantage of this extension, in a treatise like the one before us, of the field of uterine exploration beyond its strict obstetrical limits. The title-page of the present treatise announces, it is true, that, besides its leading subject—the principles and practice of midwifery—it includes, also, "the treatment of chronic inflammation of the uterus, considered as a frequent cause of abortion." We admit, likewise, that, to the obstetrician, a knowledge of the pathological conditions of the womb and its appendages is all-important, inasmuch as these conditions are liable to interfere with the regular course and favorable termination of utero-gestation; still, we maintain that an acquaintance with the etiology, diagnosis, and treatment of uterine diseases is to be acquired from the proper source;—that the consideration of their pathology, symptomatology, and therapeutical management is out of place in a treatise on the science and practice of obstetrics. With equal propriety might an account of several of the acute diseases of the general system, and other affections in which the uterus is occasionally and indirectly implicated, be introduced into our systematic treatises on obstetrics, upon the plea that they are among the frequent causes of abortion and premature labor. In the discussion of the interesting question as to how far chronic inflammation of the uterus is to be considered a cause of abortion, it was not at all necessary that Dr. Miller should interrupt the regular course of his treatise for the purpose of entering as fully as he has done into the general subject of uterine pathology and therapeutics.

The subject of the ensuing, fourth, chapter is pregnancy. The prelections of Dr. Miller on this all-important branch of the physiology of the female are marked by great ability. The phenomena of pregnancy, both maternal and fœtal, from the period of conception to the completion of utero-gestation, are clearly and accurately delineated; while the important questions that have arisen in respect to the nature of the successive changes that take place in the mucous membrane, vascular system, muscular tissue, and in the vital condition, size, figure, and relations of the womb during the period of gestation, as well as in reference to the true character of the intra-uterine life and nutrition of the fœtus, and the true connection existing between its organism and that of the mother, are carefully examined and elucidated by the results of the most recent and reliable facts and observations.

Dr. Miller examines the validity of the position assumed by Levret, Baudelocque, and others, and, what is most remarkable, still advocated by distinguished obstetricians of our own time: namely, that the development of the uterine cavity, in the course of pregnancy, is the result of the growth of the ovum. The fundus giving way before the distending force of the latter first, subsequently the body, and finally, the cervix; so that, toward the close of gestation, the fundus, body, and neck of the womb, form but one common cavity, nothing remaining of the cervix but the cushiony circle of the external or vaginal orifice. In connection with this doctrine of a forced development of the uterus, it was also held, and still is by teachers of high authority, that during pregnancy an antagonism exists between the muscles of the body and those of the neck of the uterus; in consequence of which the former tend constantly to expel the ovum from the uterine cavity, while the latter, with an equal force, resist its expulsion. From this equilibrium between the two forces, in the normal condition of things during gestation, the ovum is retained, until toward the close of pregnancy, when the muscles of the body of the womb which were first developed to their full capacity, offer the greatest resistance to any further distension; the equilibrium between them and the muscles of the neck is, in consequence, destroyed. The fibres of the body begin now to make efforts to expel the fœtus; and, henceforth, the fibres of the neck, receiving the entire distending force of the uterine contents, as well as the reaction of the body, are rapidly developed, until, finally, labor sets in, and the expulsion of the fœtus is no longer resisted by the extenuated muscles of the cervix.

In respect to these very clumsy and purely mechanical views, Dr. Miller remarks:—

> "It is manifest that the theory rests on the assumption that the uterus is naturally disposed to resist, *unguibus et rostro*, all intrusions upon its premises, an assumption so contrary to analogy that it ought not to be admitted without the clearest proof. But let us examine its pretensions in its twofold application; and *first*, as affording an explanation of uterine development. Here it seeks to expound a phenomenon which is itself gratuitously assumed, namely, such a development of the cervix as enlarges the capacity of the cavity of the gravid uterus.
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> "According to the observations of M. Cazeaux, the neck, especially in women who have borne children, preserves the whole of its length until the last fifteen days of pregnancy, or at least until the commencement of the ninth month. He avers that he has repeatedly verified this fact, which had been already noted by Professor Stoltz, of Strasburg, and publicly taught by Professor Dubois since 1839.

"In primiparæ, the cervix uteri offers some peculiarities, which, as far as our present subject is concerned, consists in its shortening somewhat, instead of preserving its usual length, throughout the greater part of pregnancy, as in multiparæ, and in its internal orifice becoming dilated before the external. Professor Stoltz explains this shortening in the following manner:—At the sixth month, the vaginal portion of the neck begins to shorten, *while it widens at its superior part.* The external orifice, continuing closed, approaches the internal, and consequently the cavity of the neck becomes larger in the middle, *until the two orifices are brought near each other; the internal orifice then opens first,* which happens during the last fifteen days of pregnancy; the rest of the body disappears much more rapidly than it had done before, and a projection can no longer be felt: the external orifice remains closed.

"The observations of Professor Stoltz are substantially confirmed by M. Chailly, and the entire account which he gives of the changes that the neck undergoes during pregnancy, contradicts the hitherto received opinions of writers on the subject.

"There is one well-known fact to which we may allude, that goes far to establish the accuracy of these researches of M.M. Stoltz, Dubois, Cazeaux, and Chailly, if it be not, of itself, sufficient to refute the opinion formerly entertained. It is this:—When the neck of the uterus is so much developed as to allow the finger to be passed to its upper orifice, which it is by the seventh month in multiparæ, the membranes can be felt, and are organically united to the uterus around the margin of the orifice. When, again, the neck is entirely obliterated, as it is at term, the membranes can be felt, and are still attached around the os uteri. Now, as it is admitted that, during the first five or six months, the ovum is confined to the cavity of the body, and that the neck is not lined with decidua, were the obliteration of the neck owing to the expansion of its upper part, either the membranes would be too high to be reached by the finger, or if they were sufficiently extensible to be pushed down into the expanding neck by the growing ovum, they would not be found adhering to its surface. The latter declaration is authorized by the fact that, in the progress of gestation, the membranes become less vascular, and their adhesion to the internal surface of the uterus is gradually weakened. But, in either case, at the seventh or ninth month the membranes are found to have vascular connection around the uterine orifice, for when separated by the finger, or by uterine contractions, as in the latter case they are so soon as labor commences, there is a slight effusion of blood. We conclude, therefore, that the neck contributes nothing to the cavity of the gravid uterus, which is made up entirely of the dilated cavity of the body.

"The *secondary application* of the theory to explain the induction of labor is best met by demanding the proof that the uterus displays, during gestation, such intolerance of its burden as is attributed to it.

"There is absolutely no evidence of such contractile efforts of the uterus as this theory assumes, except the occasional tension of the membranes, sometimes observed toward the completion of gestation, the os uteri being then sufficiently open to admit the finger. Slight contractions of the fundus may produce this tension, but these are not such as constitute labor, for they are unaccompanied by pain, and take place without the consciousness of the individual herself. Allowing, however, that they are labor-pains in disguise, their presence at so advanced a period of pregnancy is no proof of their existence during the earlier periods; and in complete absence of such proof, we are loath to admit the assumption that they do exist, because it makes the uterus the strangest anomaly in the body, if not in nature. It is destined first to contain and nourish the fœtus, and then to expel it when its maturity is acquired. But, according to this assumption, the first is an irksome task imposed upon it, which it continually endeavors to quit by expelling its contents. Such a constitution of the gestative organ could hardly exist, and abortion be not perpetually threatened, without, as far as we can perceive, any compensating benefit; for we cannot imagine that its development could be promoted by it. There is, in fact, no conceivable way in which contraction of the uterine fibres during pregnancy could favor their development, except that imagined by Baudelocque, viz., one class of fibres stretching another by the superior force of their contractions, by which he attempts to account for the development of the cervix uteri. How then are the fibres of the body of the uterus developed during the first six or seven months of gestation, the neck being quiescent all the while? If those need no such force to aid their development, neither do those of the neck; both are developed after their own peculiar fashion, without the interference of one with the other. The neck, as we have seen, is developed in women who have borne children, in a manner inconsistent with the idea that any sort of force is exerted upon it by the body; that is, from below upward.

"From what has now been declared, it may be inferred that I reject the notion of Levret, endorsed by Baudelocque, and more recently by Meigs, that the neck is the antagonist of the body of the uterus, *during pregnancy*, simply for the reason that there is not a tittle of evidence that there is anything to be antagonized. The body quietly suffers itself to be distended by the product of conception, or rather its growth keeps pace with that of the ovum, while the neck is not at all concerned either in making room for the fœtus or barring its escape. But though the neck be not called on to exert a retentive faculty, it holds, nevertheless, the key, if I may so say, which unlocks the uterine cavity, by virtue of the relation established between it and the body by pregnancy, in consequence of which impressions made upon its internal surface are reflected upon the body and excite its muscular fibres to expulsive action. Hence the necessity of keeping the neck closed to so late a period of pregnancy, while the body is growing and expanding in every direction. That labor is naturally excited in this way I shall endeavor to prove hereafter. The neck is not the active but the passive custodian of pregnancy; it simply withholds the key, until the time to unlock the uterus has arrived."

That the enlargement of the uterus, during the progress of gestation, is an active process, an actual growth, and not a mere passive distension of its parieties, the result of the pressure exercised upon them by the contained ovum, may be considered as an established fact. That under all the normal conditions of pregnancy, no disposition is evinced on the part of the uterus to expel its contents, and, consequently, no necessity for any power on the part of the muscles of the uterine neck to resist this expulsion until the period of gestation is accomplished, must, we think, be evident to every one who will take the trouble to examine the subject with care. The office ascribed by Dr. Miller to the cervix uteri is, it is true, a hypothetical one,—it has nevertheless all the characteristics of truth, and is in close accordance with established facts and observations.

The history of the ovum, from its first introduction into the uterine cavity until the completion of its placental connection with the maternal organism, as given by Dr. Miller, is particularly interesting. In relation to nearly everything connected with the early life of the ovum in utero, the views heretofore almost universally entertained, have been shown, by recent and more carefully conducted observations, to be incorrect.

In place of the ovum acquiring what has been hypothetically termed its reflex decidua, by encountering at the uterine orifice of the Fallopian tube the decidua vera, which is stretched across the orifice, and is pushed before it by the ovum as it enters the cavity of the uterus, forming at first only a slight protrusion in the cavity of the true decidua, which increases, however, with the growth of the ovum, until eventually it comes in contact at all points with the uterine walls, which are then lined by two layers of decidua. Instead of this, which is the Hunterian hypothesis, it will be found, upon examination, that the minute fecundated ovum after its entrance into the cavity of the womb becomes imbedded in the lining membrane of the latter, which has become prepared for its reception by an increase of vascularity, thickening, and softening, and which quickly grows up around it, and encloses it between two layers of membrane, the outermost being the so-called *decidua vera* and the innermost the *decidua reflexa* of Dr. Wm. Hunter; and which Dr. Miller suggests to designate as *uterine* and *fœtal* decidua.

During the first two months of pregnancy the ovum is attached to the decidua by the villi of the chorion, forming a number of slender cords, "which," as Jacquemier finely expresses it, "is the most delicate mode of suspension, and best calculated to prevent injurious consequences from concussions, blows, &c., at a period when protection is most needed. They are, also, spongioles for absorbing nutriment from the surrounding fluids of the mother, besides being essential elements in the construction of the placenta."

It is not until the third month of pregnancy that the placenta begins to make its appearance upon that portion of the chorion which is toward and in contact with the uterine decidua. The place at which the ovum becomes connected with the uterine membrane, first by the villi of its chorion, and subsequently through the intermedium of the placental structure, is variable. The ovum may become imbedded in the mucous coat of the uterus soon after its entrance into the womb, and consequently in the neighborhood of one of the Fallopian orifices, or it may be carried some distance from thence before its arrest and fixation.

In reference to the nature of the placental connection between mother and fœtus, the views advanced by Weber are adopted by Dr. Miller, namely, that a congeries of colossal capillaries intervene, into which the utero-placental arteries open, and from which the utero-placental veins arise. Against these capillaries, in which the circulation is extremely sluggish, the villi of the chorion impinge, and, as it were, penetrate, as they prolong their growth outwardly, and become, as must necessarily be the case in such a process, invested with a covering of the inverted membrane, forming the walls of the decidual capillaries.

In regard to the much-disputed question, What office does the placenta fulfill in respect to the fœtus? Dr. Miller replies, and we believe correctly, that the office of the placenta is twofold, being first, the organ of respiration of the fœtus, and, in the second place, the organ through which the fœtus derives its nourishment from the mother.

> "The umbilical vessels," he remarks, "already described as terminating in capillaries upon the dentritic processes of the chorion, belong exclusively to the vascular system of the fœtus. They consist, as we have seen, of three trunks, two arteries, and one large vein—a branch of the inferior vena cava—and have no communication whatever by anastonosis with the blood-vessels of the mother. The arteries convey no inconsiderable portion of the blood of the fœtus to the placenta, which, after circulating freely and minutely through it, is returned to the fœtus, not a drop passing into the vessels of the mother. While circulating in the placenta, this blood is brought in contact with the blood of the mother, flowing through the canals of the maternal portions of the placenta; or, at least, nothing intervenes but the thin walls of these canals, and the delicate coats of the fœtal capillaries. The fœtal blood is thus enabled to abstract oxygen from, and impart its superfluous carbon to, the blood of the mother; and although it may be supposed that this vital operation is not as freely performed as in animals that inhale atmosperic air, it is at least as advantageous an arrangement as the branchial respiration of such as inhabit the water, to which it is, in fact, analogous—fishes getting their oxygen from water, and the fœtus from the maternal blood."

Dr. Miller adduces the consequences which result from compression of the cord to such a degree as to arrest the circulation of the blood through its vessels, as conclusive proof that the fœtal blood is aerated in the placenta. We know that such compression is liable to happen during labor, when the cord prolapses before the head of the child in vertex presentations, and during the passage of the head through the pelvis in presentations of the nates, and that whenever it does, speedy death is the consequence, attended by all the phenomena of suffocation.

In proof that the fœtus derives its nourishment from the mother through the placenta there is, it is true, no positive evidence; Dr. Miller insists, however, that the negative evidence bearing upon this point is altogether satisfactory.

"There is," he remarks, "absolutely no other medium through which the fœtus can obtain its supplies of alimentary matter. The only other possible source is the liquor amnii,—the fluid which surrounds the fœtus; and the doctrine that this is appropriated, either by absorption or deglutition, has long since been exploded by facts and arguments that cannot be answered, which need not be rehearsed in this place. How, or in what form nutriment is received through the placenta is not known. Most probably there is a set of vessels, in connection with the umbilical capillaries, which open into the maternal portion of the placenta, and, abstracting from thence the needful supplies, convey them at once into these capillaries, to be incorporated with the fœtal blood. Whether these hypothetical vessels take up blood, or only certain of its elements, we do not know, nor, as far as I can see, is it a matter of the least practical moment that we should know. Nature, here as elsewhere, is chary of her revelations, that might gratify the curiosity without adding to the resources of her votaries."

A portion of the concluding section of the present chapter, which treats of the position of the fœtus in utero, is somewhat, as we conceive, unprofitably occupied with an inquiry into the cause of the great preponderance of vertex presentations, and a long exposition of facts to prove the incorrectness of the supposition, still admitted by some, and at one period very generally entertained, that it is due to the greater weight of the head over that of the rest of the body, throughout every stage of fœtal development. Dubois and Simpson ascribe the greater frequency of head presentations to a vital power inherent in the fœtus; the usual position of which, according to the first, is assumed and maintained by its own voluntary or instinctive movements; while, according to the latter, it is the result of a purely reflex or excito-motory action. Of this vital doctrine Dr. Miller is an adherent.

"Whether," he remarks, "with M. Dubois, we regard the fœtus as the subject of sensation and voluntary motion, or, with Professor Simpson, consider it as insensate, but capable of as lively excito-motory phenomena as a decapitated frog, we may account, upon either theory, for its taking up its usual position in the womb during the latter months of pregnancy, and recovering it when lost by the operation of any disturbing cause. In any other position, there is a want of adaptedness to its lodging, and the pressure made upon its surface by the opposing uterine parieties, whether it acts as an excitor-stimulus, awakening reflex motion, or produces disagreeable sensations, leading to sensorio-volitional movements, is followed by a series of movements which do not cease until the fœtus has recovered its adaptive position, in which it is freed from such stimulus or disagreeable sensation. It is not so in the early months of gestation, when, as we have seen, there is ample scope for the fœtus in the relatively larger cavity of the womb, and it may assume any position it pleases, (if it can be pleased;) hence, the greater proportionable number of mal-presentations in cases of premature labor, the fœtus being caught in its gambols."

This is all pure hypothesis—a mere guessing at what we know nothing about; and without the remotest advantage in a practical point of view. As Dr. Miller himself admits, the most frequent intra-uterine attitude of the fœtus, with its limbs flexed and folded upon its body, and its head dependent, is "among the most felicitous of its obstetric aptitudes," adapting it in form to that of the uterine cavity in the advanced stage of pregnancy, and presenting it under the most favorable aspect for the proper progress and safe completion of the mechanism of labor. It is a legitimate conclusion, therefore, that it is the attitude impressed upon the fœtus by the same vital laws which govern everything relating to intra-uterine gestation. As to the precise manner in which these laws act in producing and maintaining what may be assumed as the normal position of the fœtus, or what are the forces by which the operation of those laws are occasionally interfered with, and mal-presentations allowed to occur, we are and will probably ever remain in profound ignorance.

The subject next treated of is abortion, (Chap. V.) It is a subject of deep interest, and from the frequency of its occurrence, and the actual danger with which, in the majority of instances, it is attended, demands the closest study on the part of the obstetric practitioner; a large share of whose attention should be directed to the investigation of its most frequent causes, with a view to fix upon the means best adapted to prevent its occurrence; to arrest, if possible, its progress, so as to secure the safety of the fœtus, or, if this be impossible, to protect from injury the constitution of the female in whom it takes place.

One of the most constant attendants upon abortion, and a chief cause of the immediate danger attendant upon its occurrence, is profuse or long-continued hemorrhage. According to Dr. Miller, the source of this hemorrhage is wholly different from that which attends or immediately follows the extrusion of the secundines in natural parturition. The blood in abortion proceeding chiefly from the decidual vessels, probably from both layers of the decidua; it may issue from any point of the ovum or internal surface of the uterus, while in parturition it flows exclusively from that portion of the uterus to which the placenta was attached, and proceeds from the ruptured utero-placental vessels. He believes that in abortion the hemorrhage is often the result of decidual hyperæmia,—an exudation from the distended and overloaded blood-vessels of the decidua, without rupture. This, he thinks, may be inferred from the sense of fulness and weight which is not unfrequently complained of previous to the eruption of blood, as well as from the further fact that the hemorrhage may precede the uterine contractions, and is always coeval with them, even in their incipiency, when they are too feeble and few to disturb the relations of the ovum to the internal surface of the uterus.

These views of Dr. Miller are highly plausible, and demand, at least, a candid examination, in conjunction with the evidence adduced by him in their support.

After a very good sketch of the symptoms and signs of abortion, its causes are considered. These are admitted to be multifarious. It may be the result of various accidental causes, such as injuries and strong mental emotions; of febrile diseases, especially the exanthemata; of drastic purgatives, or direct uterine stimulants; of diseases of the ovum, resulting in the death of the fœtus. But, according to Dr. Miller, the most prolific cause of abortion is a diseased state of the gestative organ itself, especially inflammation, either of the cervix, or of the entire organ. He considers that—

> "Inflammation of the mucous membrane of the body of the uterus may, doubtless, directly excite contractions which shall expel the ovum, just as inflammation of the intestinal mucous membrane may directly excite increased peristaltic movements which shall expel the feces; but when the inflammation is limited to the cervix uteri—and this is most frequently the case—it acts as an abortive through the medium of the relation existing between the neck and body of the organ, by virtue of which impressions made upon the cervical nerves are reflected, through the spinal cord, upon the muscular fibres of the body and fundus, exciting them to contraction."

While, however, the latter—inflammation of the cervix—will most unquestionably produce abortion, it is more commonly the former—endo-uteritis—which, according to our author, exercises a morbid reaction on the ovum. When in a state of inflammation, the mucous membrane of the body may be altogether unapt to undergo transformation into the deciduous membrane, or only fitted for an imperfect and insufficient metamorphosis.

> "In the first case," Dr. Miller observes, "abortion, and that speedily, must ensue; for the ovum cannot affect an attachment to the uterus, and may be degraded into a mole or a mass of hydatids; in the second, the disease may be communicated to the placenta, and through it to the fœtus, deranging its nutrition and variously affecting its growth, so as to produce, perhaps, even monstrosities."

That subacute inflammation of the lining membrane of the body and neck of the uterus, and other pathological conditions of that organ, though insufficient to prevent conception, may be among the occasional causes of abortion, no one who has examined the question with sufficient care will, we are persuaded, be inclined to doubt. We cannot, however, admit that abortion is so generally to be ascribed to a diseased state of the mucous membrane of the uterus, as Dr. Miller would seem to insist upon, inasmuch as we have not become convinced from the result of our observations, which have been by no means few in number, nor, we trust, superficially or carelessly conducted, that endo-uteritis, with its results, is a disease of so common occurrence as they are supposed to be by many respectable authorities, both in this country and in Europe. We are to recollect, also, as Dr. Miller himself pointedly inculcates, that disease of the womb is occasionally an effect rather than a cause of abortion.

After stating that abortion not unfrequently lays the foundation for future ill health, and especially for chronic disease of the uterus, affecting mostly the os and cervix, he remarks:—

> "From my own experience, now somewhat extended, I am convinced that quite a large proportion of the cases of chronic inflammation and ulceration of this portion of the organ may be traced to abortion as their cause, as their history clearly reveals; for it often appears that, previous to an abortion, the health was unexceptionable, but since, though years may have elapsed, the patient has complained of uterine symptoms, which have been misunderstood until the true nature of the case was disclosed by a specular examination. That the os and cervix would be likely to suffer from abortion is no more than might, *à priori*, be expected, considering their organic condition at the time, and the amount of force that is required to overcome their resistance. Forced to dilate at a time when there is but little dilatability, lesion of structure is the not unfrequent consequence, which, though it may be slight, is sufficient to set up inflammation, which is all the more disposed to spread and take deep root on account of the travail so recently encountered. Whether this, my reasoning about the matter, be correct or not, still the fact remains, and is unimpeachable by clinical observation, that abortion is a frequent cause of cervical inflammation and its sequences, induration, hypertrophy, and ulceration."

The treatment of abortion is divided by Dr. Miller into the resistive, the palliative, and the prophylactic; or the means adapted, 1st, to avert the accident when threatened; 2d, to conduct it to as favorable an issue as possible when inevitable; and 3d, to guard against its occurrence by the removal of all causes liable to occasion it, or which may have already produced it in previous pregnancies of the same patient. Each of these means is very ably and fully discussed, and in accordance with the observations of the most reliable and recent authorities upon this branch of female therapeutics and hygiene. Under the head of prophylactic measures, Dr. Miller enters at great length into a consideration of the proper management of uterine disease in general—including cervical inflammation and ulceration, endo-uteritis, and uterine displacements.

Although we consider all this out of place in a systematic treatise on obstetrics, we cannot but award to the author the credit of having presented a highly instructive and discriminative account of the management of these affections, which will amply repay a careful perusal by the medical practitioner.

In regard to the recently much disputed question whether displacements of the womb are the invariable result, as one party maintains, of inflammation, or, as another affirms, while they are produced always by other causes than inflammation, are yet productive of the latter when they do occur, Dr. Miller considers both positions as too exclusive. He holds that though displacement of the uterus is not invariably caused by inflammation of the organ, it is so occasionally; while in other cases the inflammation detected by the metroscope is evidently the result and not the cause of the abnormal condition of the uterus.

Among the mechanical means suggested for the rectification of the several uterine displacements, Dr. Simpson's pessary comes of course under notice; in reference to it, Dr. Miller holds the following independent language, which will be endorsed, we are convinced, by every cautious and observant practitioner:—

> "This kind of mechanical contrivance for holding the uterus in its proper situation appears to me to be the most unphysiological of all others that have been proposed. The uterus, in its natural state, possesses great mobility, amounting almost to locomotion, by which it is enabled to accommodate itself to the various disturbing influences by which it is surrounded. Pressed upon by the contractions of the diaphragm and abdominal muscles, during great muscular exertions, it descends towards the vulva; pushed up during coitus, its fundus is tilted forward and its cervix backward, while considerable distension of the urinary bladder necessarily retroverts it: in a word, it readily adapts itself to its circumstances, whatever they may be. Now, to rigidly fix such an organ upon a metallic axis, and leave it no possibility of escape under the thousand impulsions which it daily receives, is to place it in a more unnatural predicament than any malposition can possibly be. The intra-uterine pessary is, however, not more unphysiological than unpathological. Rarely is inflammation altogether absent in these displacements, and sometimes it is very intense; to irritate the uterus in such a state, by thrusting a foreign body into it to compel it to keep its place, is a species of surgery which would not be tolerated in the outward parts. That some of Professor Simpson's patients should not have been able to bear his pessary is not surprising; the wonder is that any of them could bear it, while it is a miracle that many of them got well.
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> "After all, the intra-uterine pessary fulfils its indication—albeit it performs its duty somewhat too sternly—that is, it keeps the uterus in the place allotted by obstetric authority, with its metallic axis coincident with the axis of the pelvic brim. And this is more than I am warranted to say in favor of any other pessary that has been recommended for retraversio uteri, not even excepting Prof. Meigs's elastic annular pessary, so much lauded by him.
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> "If it should be inferred from the foregoing remarks that I have but a poor opinion of pessaries, the inference would be logical and just; for though I have

tried all kinds of pessaries, not excepting Dr. Simpson's, I have derived but little benefit from them, while they have been a fruitful source of vexation to myself and of annoyance to my patients. As, however, I have admitted the validity of the indication to restore the uterus to its natural position, it may be reasonably demanded, if pessaries are unavailing or mischievous, how is the indication to be accomplished? After I had discarded pessaries in the treatment of endo-uteritis complicated with retroversion, I was led to conjoin repeated replacement of the uterus by the sound, and cauterization of its cavity, while the organ is *in situ*, and by this method of treatment, which I may venture to call my own, have obtained more satisfactory results than by all other methods which I had previously tried."

The ensuing chapter (VI.) is devoted to a consideration of the flooding of advanced pregnancy and incipient parturition. Those sudden, profuse discharges of blood which occur toward the close of the period of utero-gestation, and always imply the separation, to a greater or less extent, of the placenta from the uterus, and the laceration of the utero-placental vessels, are among the most appalling accidents the obstetrician is liable to encounter, inasmuch as there is nothing which can befall a pregnant woman fraught with greater danger,—jeoparding the premature expulsion and death of the fœtus, as well also as the sudden death of the mother.

These floodings may be either *accidental* or *unavoidable*. The first resulting, in cases in which there is no abnormal position of the placenta, from the premature detachment, to a greater or less extent, of the latter, by mechanical violence, such as falls, blows, &c. Dr. Miller thinks it probable that an excited state of the circulation, especially in plethoric habits, may also, in some instances, suffice to bring about the same disastrous result. Irritation of the intestinal canal, whether induced by disease or the operation of drastic purgatives, that excite tenesmus and violent straining efforts, may also be reckoned among the causes of accidental uterine hemorrhage in the latter months of pregnancy.

Unavoidable uterine hemorrhage is that dependent on placenta prævia, or the implantation of the placenta in such a manner at the mouth of the womb, that the rupture of the utero-placental vessels is unavoidable as soon as labor sets in and the rapid development of the cervix and the dilatation of the os uteri commence. The latter form of flooding, which is the least manageable and most dangerous, is happily the less frequent of the two.

From the particular conditions attendant upon the occurrence of uterine hemorrhage during parturition, and particularly after delivery when the placenta is wholly separated and expelled, Dr. Miller concludes that in all cases of flooding, accidental or unavoidable, resulting from the partial or entire detachment of the placenta in the latter months of pregnancy, the chief, if not perhaps the only source of the hemorrhage, is the placental surface of the uterus itself.

In cases of placenta prævia it has been usually taught that the placenta is implanted either at or immediately over the os uteri, so that its attachments to the uterine parieties are necessarily destroyed by the dilatation, at the commencement of labor, of the uterine orifice. The inaccuracy of such opinion is clearly indicated by the author. He proves that, during the first six months of pregnancy, the cervix uteri preserves its cylindrical figure, and keeps both its orifices, but especially the superior, tightly closed. It is plain, therefore, that the placenta is implanted originally over the cervix, but attached, nevertheless, to the parieties of the inferior part of the body of the uterus. It is with the body, and the body only, that it forms an organic union by the reciprocal passage of blood-vessels between them. It is a matter of impossibility that in any case the placenta can be implanted on the internal surface of the uterine neck. The following is the correct explanation of the occurrence of hemorrhage in these cases, toward the close of pregnancy or immediately upon the occurrence of labor.

> "During the first six months of pregnancy the uterus is developed at the particular expense of the fibres of the fundus of the organ, while during the last three months the fibres of the inferior part of the body are rapidly developed, insomuch that the further increase of size in the uterine cavity is acquired principally by the expansion of this portion of the uterus, as its pyriform shape in the early, and its perfectly avoidal shape in the latter months of pregnancy proves. This fact in respect to the development of the uterus, taken in connection with a fact already adverted to, viz. that the placenta has nearly completed its growth by the sixth month of pregnancy, affords a ready explanation of the occurrence of hemorrhage. When the placenta has its usual insertion, its development corresponds with that of the portion of the uterine walls upon which it is implanted, and there need be no hemorrhage; but when it is inserted over the neck, or even in its immediate vicinity, the matured placenta cannot follow the rapidly-expanding parieties of the uterus, and hence the stretching and rupture of the utero-placental vessels, and the unavoidable production of hemorrhage."

A very full and able account of the symptoms, course, and termination of flooding, is given in the second section of the present chapter, which need not, however, detain us.

The treatment of flooding Dr. Miller divides into the *medical* and the *obstetric:* including under the former all that can be done, either by hygienic measures or the administration of medicines, to control the discharge and prevent its return; and under the latter, the institution of labor and the delivery of the patient, when pregnancy can be no longer maintained without jeoparding her life.

When in cases of accidental hemorrhage the obstetric treatment is found to be unavoidable, Dr. Miller advocates the plan pursued by Puzos; in the annexed description of which we follow the translation given in the chapter before us.

> "It is seldom that the loss of blood, produced by the detachment of the placenta, does not occasion more or less dilatation of the uterine orifice, the coagula about it acting as so many wedges that distend it and dispose it to yield. This incipient dilatation has a tendency to bring on labor, and is sometimes accompanied by slight pains. But inasmuch as the exhaustion and faintness arising from the loss of blood are opposed to the continuance of the uterine contractions, we must renew these when wanting, and increase them when too feeble. With this view, one or two fingers must be introduced within the os uteri, which is to be gradually opened by the employment of force proportioned to its resistance. These dilating efforts should be suspended from time to time, to allow intervals of rest. By this means the uterus is roused to action, labor-pains come on, and the membranes are rendered tense. The next object is to rupture the membranes without delay, to give escape to the liquor amnii, and bring about a diminution in the size of the uterus equal to the space the waters had occupied. The condensation of the uterus that succeeds the discharge of the liquor amnii presses the fœtus upon the os uteri, when stronger pains ensue, which, aided by the pressure of the fingers around the margin of the orifice, succeed in advancing the child. Meanwhile the blood that would otherwise have escaped is retained in the vessels by the contraction of the uterine fibres and the compression to which they are subjected. By this co-operation of nature and art, the delivery is greatly expedited, and we may enjoy the satisfaction of serving both mother and child, who must have been lost if left to nature alone, and who might have been destroyed by artificial delivery."

This same procedure of Puzos is recommended by Dr. Miller in cases of unavoidable hemorrhage from the partial presentation of the placenta. There can be no doubt that when skilfully and cautiously practiced, the manipulations referred to are adapted to the larger number of instances of accidental hemorrhage, and cases of partial placenta prævia, and will have the effect of bringing on regular and efficient contractions of the uterus, so as to hasten the delivery of the fœtus and suspend the discharge of blood. The procedure, to ensure its success and prevent injury resulting from it, demands, however, that the utmost judgment and care should be exercised in carrying it into effect; in the hands of a rash and inexperienced practitioner it is liable to be productive of far more injury than benefit.

In cases of placenta prævia in which the placenta is implanted centrally over the mouth of the womb, the artificial separation of the attachments of the after-birth to the inner surface of the uterus, with the view of arresting the hemorrhage which sets in immediately upon the commencement of labor, was proposed a few years since by Prof. Simpson; and the efficacy of the practice has been positively asserted by several distinguished obstetricians. Dr. Miller endeavors to show—and we believe that whoever will follow him in his examination of the subject will admit the correctness of his conclusion—that whether considered in a scientific point of view, or tested by its results in the cases in which it has been resorted to, so far as these have been made public, the artificial separation of the placenta, as proposed by Prof. Simpson in cases of placenta prævia, does not present that claim upon our confidence which would warrant a resort to it in the generality of instances.

Dr. Miller is still more opposed to the plan which, with a vertex presentation, has been pronounced by Rigby and others the only one that affords any chance for the preservation of the life of the mother, namely, turning the child, and its delivery by the feet. "If," he remarks, "delivery in this manner be undertaken too early, we may cruelly add to the sufferings of our patient and violently hurry on a fatal termination; if it be too long deferred, we dare not operate, lest we extinguish the flame of life, already flickering in its socket." Even when performed under the most favorable circumstances, turning is an operation attended always with extreme danger to the mother. On the whole, the feasibility and success of the operation of turning in placental presentation is not, according to Dr. Miller, such as to create any prepossession in its favor, but the reverse. The plan of treatment he recommends consists in "originating expulsive contraction of the uterus by the tampon or plug, and then puncturing the membranes, relying on the tampon to control the flooding, until the liquor amnii is evacuated."

This treatment, he remarks, is the one he has invariably employed, and, so far as the mother is concerned, with uniform success. It is true, he admits, his experience in cases of placenta prævia has not been large; it has been sufficient, however, to give him some acquaintanceship with their characters and management. In these cases, he remarks—

> "The tampon is preferable to manual dilatation, as an oxytocic, because forced dilatation could not be practiced without necessarily still further detaching the placenta, giving rise to additional hemorrhage, all the more profuse on account of the non-purturient state of the uterus. Then, again, such manipulations would be objectionable because of the greatly more vascular and sensitive condition of the portion of the uterus contiguous to the os, which has been already mentioned as a reason why delivery by turning ought to be refrained from.
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> "In arousing the uterus to expulsive contraction the tampon acts, I suppose, through the channel that has been more than once indicated in the previous pages of this book, viz. irritation of the incident nerves of the cervix, leading to reflex action of the fibres of the fundus and body. Explain as we will, however, the fact is generally admitted that the tampon is competent to excite uterine contraction and bring on labor. Should it fail, (and what may not?) it may be reinforced by the puncture of the placenta as recommended by M. Gendrin, which, considered merely as a means of bringing on labor, is excellent and

wholly unexceptionable; and it will be observed that I am not, just now, speaking of the restrainment of hemorrhage, but of the excitement of labor. No case can occur, I think, in which the tampon, aided if necessary by puncture of the placenta, will fail to bring on labor, in a longer or shorter time; and where the tampon alone is sufficient, and labor is regularly established by its instrumentality, either the placenta must be punctured to evacuate the liquor amnii, or the finger must be pushed up beyond its margin to rupture the membranes during a uterine pain. I have myself usually practiced the latter alternative, and always felt that my patient was safe when advanced thus far on the road to recovery.

"The supervention of labor—the evacuation of the liquor amnii—these, in their order, are the great bulwarks of a flooding woman, no matter where the placenta is implanted. It is a maxim in obstetrics that a *contracted* uterus cannot bleed; it might, I think, be amended and enlarged by adding that neither can a *contracting* uterus bleed when it is emptied of its waters—or, at any rate, if it bleed, the hemorrhage is no longer dangerous.

"Notwithstanding that the tampon may be generally depended on to restrain hemorrhage, it is certainly possible that it might disappoint our expectations, and then the evacuation of the amniotic fluid by placental puncture may be had recourse to, as an auxiliary, on the authority of M. Gendrin. Should this fail, and the hemorrhage threaten to destroy the mother ere uterine contraction can be excited, there can be no doubt of the propriety of separating and extracting the placenta, according to the letter of Dr. Simpson's proposal, viz. solely with a view to the safety of the mother, losing sight of the child, whose interests are altogether subordinate. Such a procedure excludes, of course, delivery by turning, by which, it has been shown, many maternal lives have been sacrificed that might have been saved, had the expulsion of the child been left to nature."

The causes of labor form the subject of the seventh chapter. The two sections of which are devoted to a consideration, the first, of the efficient, and the second, of the determinative cause of labor,—the chief efficient cause being the uterine contractions, aided as accessory causes, by the contractions of the diaphragm and abdominal muscles.

In respect to the determinative cause, or that which, at the termination of the normal period of utero-gestation, brings into operation the expulsive contractions of the uterus and its auxiliaries, Dr. Miller adopts the views advanced by Dr. John Powers, namely, that the uterine contractions are excited, when pregnancy has completed its term, by the irritation of the cervix, and especially of the os uteri, resulting from the contact, which then takes place, of the ovum with the latter. In evidence of the correctness of this explanation of the determinative or exciting cause of labor, Dr. Miller refers to the peculiar manner in which the uterine neck is unfolded during pregnancy,—it remaining unchanged until a very late period of gestation; until, in fact, a short time before labor sets in, so as to preclude the possibility of any contact between the fœtus and the os uteri occurring at an earlier period; excepting in cases in which the cervix is developed too soon or progresses too rapidly, when there will always be just ground for apprehending a premature expulsion of the fœtus. Another evidence of the correctness of Dr. Powers's theory is the fact that the rectum and bladder are both excited to expel their contents by irritation of their orifices.

The entire chapter is marked by great ability,—the views advanced in it, especially those in reference to the exciting cause of labor, are interesting and highly plausible; they cannot fail to demand a favorable consideration on the part of those interested in the physiology of obstetrics. That they are liable to many objections is very certain. The most important of these are very fully and candidly examined by Dr. Miller, who dismisses them as of insufficient force to invalidate the views advanced by Dr. Powers, supported as these are by facts and arguments of such acknowledged cogency.

The phenomena of labor is the subject next in order. (Chap. VIII.) These are clearly and accurately described in the order of their occurrence, while the comparative importance of each is indicated.

There has been some discussion as to the propriety of guarding from rupture the fœtal membranes until the os uteri has become fully developed and the head of the child has passed fully into the cavity of the pelvis,—it being maintained by some obstetricians, and those of the highest authority, that the pouch of waters, both before and after its partial protrusion at the uterine orifice, promotes the expansion of the os uteri, and thus promotes and facilitates the progress of labor; while others contend that after labor is fully set in the integrity or rupture of the fœtal membranes is a matter of perfect indifference, so far as the suffering and duration of the first stages of labor are concerned. Some have even gone so far as to assert that the early rupture of the membranes and discharge of the waters will often facilitate and shorten parturition. On this subject the following sensible remarks are made by Dr. Miller; they are in accordance with the views of the majority of the more authoritative obstetricians:—

"*First.* The integrity of the membranes before the pouch is formed is valuable, because the propelling force has then a more suitable medium wherewith to act on the cervix than any part of the fœtus would be. This medium is the waters inclosed by the membranes, which, adapting themselves to the shape and inequalities of the cervix, make more equable pressure on its fibres, and consequently subdue their resistance more equally; whereas any part of the child that can present is not so well adapted to distend the cervix equally, and hence, while some of its fibres may be numbed by pressure, others are not conquered, but provoked to inordinate resistance, thus retarding labor by the irregular contraction which is excited.

"*Secondly.* The integrity of the membranes, after the pouch is formed, is beneficial until the dilatation of the os uteri is considerably advanced, if not completed: because the pouch, though it does not cleave like a wedge, opens the portals for the egress of the child in the gentlest manner. Should it rupture before the orifice is prepared to allow the presenting part of the child to take its place, the ruder contact that ensues not unfrequently irritates the cervix to a renewal of its opposition, and labor is thus protracted and rendered more painful.

"*Thirdly.* The pouch serves, by its presence in the uterine orifice, the most sensitive portion of the neck, to sustain and enliven the propelling contractions, upon the principle of orificial irritation. By its agency, these contractions are, in proper time, rendered truly *expulsive*, and the auxiliary forces of the diaphragm and abdominal muscles called into action. When the pouch ruptures, the presenting part of the child takes its place, and keeps up the requisite grade of irritation, until the labor is completed. That this is no fancy sketch, the phenomena of shoulder presentations will abundantly prove. In these cases, the membranes frequently protrude in the form of a long, cylindrical purse, which inadequately stimulates the os uteri, and consequently the pains are feeble for an unusual length of time. When, at length, they rupture, if the shoulder is not ready to occupy the orifice, as often happens, there is *an entire suspension of the pains for several hours.*"

Although there is nothing absolutely new in the foregoing remarks, their general accuracy being recognized by nearly all skilful and observant practitioners, yet from their importance in a practical point of view, the necessity of urging them always upon the attention of young practitioners, and the very excellent manner in which they are put by the author, we have been induced to copy them.

It is in this connection that Dr. Miller discusses the mechanism of labor, an intimate acquaintance with which is an essential prerequisite to the formation of the practical obstetrician. With entire ignorance, or imperfect and confused conceptions of the manner in which the fœtus, in the several presentations and positions it may assume, is transmitted through the pelvis,—its course, the successive changes which occur in the position and direction of the presenting part, as it is gradually propelled from the womb into the world,—the practitioner may, perhaps, stand by with folded arms during the progress of an easy, natural labor, and witness its favorable termination, the result probably of his very non-interference; but, in cases in which anything intervenes to render it tedious, difficult, or dangerous, or in which, from any cause, there is a necessity for prompt manual or instrumental interference, he can neither act with decision or skill, but, groping in the dark, is more liable, by his interference, to injure than to benefit mother and child.

The description given of the mechanism of labor by Dr. Miller is, upon the whole, clear and correct. His explanatory and critical remarks, under the head of each presentation, are replete with good sense, and may be studied with profit.

The classification of the several fœtal presentations and positions adopted by the author, is that of M. Dugès. He has introduced a slight variation of their nomenclature, to which no particular objections can be offered. The great desiderata in the terminology of this and every other branch of professional science are precision, simplicity, and shortness. These may, however, be sacrificed, to a certain extent, for the sake of uniformity. Nothing is more annoying to student and practitioner than to find each of the authors who treat upon the same subject adopting a classification and terminology of his own.

The ninth chapter is devoted to the diagnosis and prognosis of labor. The first, as it has for its object the discrimination between labor and all other conditions of the sexual organs and general system of the female, with the differences among labors, growing out of the accompanying circumstances, especially the fœtal presentations and positions, is invested with no trifling degree of importance, and fully warrants the extension that Dr. Miller has given to its consideration.

There is no doubt that in reference to the prognosis of labor,—its probable duration in any given case, its favorable or unfavorable termination as it respects the mother or child, or both, if left to the unaided powers of nature, and the necessity and period for manual or instrumental interference, certain general rules may be laid down, in the highest degree useful for the guidance of the practitioner. After all, however, these rules are rather suggestive than absolute in their application to each case as it occurs. It is from a close study of the principles of obstetrics, the mechanism of labor, the forces by which it is accomplished, the nature and comparative frequency of the various causes by which its progress may be retarded, and its completion, without the interference of art, prevented, in connection with that peculiar tact which can be acquired only by careful clinical observation, that a facility in arriving at a skilful and reliable prognosis of labor in any case can be acquired. The sections devoted to the subject in the chapter under consideration are clear, explicit, and instructive; they are well adapted for the use of the obstetrical student.

The remaining chapters of the treatise, from the tenth to the sixteenth inclusive, are devoted to the management, or, as Dr. Miller expresses it, the treatment of labor. We shall not stop to notice the inconvenience attendant upon the very clumsy arrangement which Dr. Miller has adopted in this portion of the work; but, as we run over the seven concluding chapters, notice such subjects comprised in them as strike us in consequence of their intrinsic importance or the manner in which they are treated by the author.

Dr. Miller enumerates as the principal retarding and impeding causes of labor: in the first stage, obliquity of the uterus; the inefficient or impeded action of the organ; rigidity of the os uteri: and in the second stage, inefficient and impotent action of the womb.

The proper indication in cases of obliquity of the uterus is the prompt restoration of the os uteri to its natural position. This may generally be accomplished by rest in the horizontal position; the female lying on the side opposite to that toward which the fundus uteri is inclined. When anterior obliquity is present to an extent sufficient to interfere with the expulsive action of the uterus, a bandage properly applied around the abdomen will greatly assist in the restoration of the womb to its proper position.

When strict attention to posture, continued for a reasonable time, fails to correct the malposition of the uterus, and there is in consequence evident retardation of the progress of labor, Dr. Miller advises—

> "To hook the os uteri by inserting the extremity of the finger within its orifice, and draw it toward the centre of the pelvis, in the intervals of the pains. When a pain comes on, its tendency to relapse to its former position is to be resisted with as much force as can be safely employed. If this tendency is too powerful to be resisted, the finger must yield to it; but as soon as the pain ceases, bring back the os uteri to the centre, and again endeavor to maintain it there during the next pain. By cautiously and gently, but perseveringly acting thus, the os uteri will, after a succession of centripetal and centrifugal movements, be restored to its proper place, and, the parturient forces having been brought to bear upon it, its dilatation will be effected as speedily as in ordinary cases."

Awkward and unskilful attempts at rectification of the obliquity may, Dr. Miller admits, produce inflammation of the uterus; but this, he adds, is chargeable to the operator, not to the operation, which need not cause pain, much less any such serious consequences.

> "For my own part," he observes, "I can safely declare that no mischievous effects of any kind have ever resulted, in my practice, from such tractions on the os uteri as have been recommended; and the testimony of Dr. Dewees is equally decisive in regard to their safety and efficacy. Nay, this eminent practitioner deemed them of so much importance as to advise the introduction of the entire hand, well lubricated, into the vagina, in order to get hold of the os uteri with the finger, when it cannot be reached by a well-directed search in the ordinary way; and, under the circumstances that he has specified, I should not hesitate to follow his advice, although I have not as yet had occasion to do it."

When labor is rendered tedious by the inefficient action of the uterus, attention should be directed to remove, if possible, any morbid condition of the system that may be present. If the pulse be full and strong, venesection will be proper; if the bowels are confined, they should be evacuated by an enema, or some mild, active purgative, as castor oil. If these means fail, or should they not be indicated, Dr. Miller directs the irritation of the uterine orifice by means of the finger, for the purpose of bringing on more efficient contractions of the uterus. He has had, he informs us, abundant experience in the employment of such manipulation, in the cases indicated, and, while he has seen no evil result from it, when properly practiced, he has often been surprised and gratified at its prompt and beneficial effects. "Not unfrequently a few movements of the fingers are sufficient to impart such energy and aim to the uterine contractions that the waters begin to gather, as the phrase is, and cause the membranes to protrude." Labor proceeding regularly and actively to a favorable termination.

During the first stage of labor, one of the most common causes of impeded uterine action is the premature rupture of the membranes. Dry labors, as the nurses term them, are proverbially tedious and painful. When, in such cases, from the rude contact of the presenting part of the fœtus with the os uteri, before this has become sufficiently relaxed to dilate promptly, it becomes hot, dry, tender to the touch, rigid and swollen, the free detraction of blood, when there is nothing in the constitution and general condition of the patient to forbid it, should never be neglected; following the bleeding immediately by a full, or rather large dose of opium, will, in general, be found to be productive of the best effects. Dr. Miller believes that in these cases the judicious employment of the fingers in aid of the uterine contractions is often the best means of facilitating labor. Not for the purpose of exciting uterine contractions, for these are already too strong, nor to stretch open the os uteri, but simply to press upon the margin of the latter during the pains, "in order that their counter-pressure may keep it in as firm contact with the head as the rest of the cervix, and the orifice be thus brought within the pale of the dilating influence of the uterine contractions. Both Hamilton and Gooch highly recommend this practice; but their object is to *push up* the edge of the orifice over the head of the child, to liberate the band of the cervix, supposed to be incarcerated,—a condition which, if it really existed, could scarcely be reached by such a procedure."

In cases of inordinate rigidity of the os uteri, Dr. Miller recommends the ordinary treatment,—copious blood-letting, opiate enemata, tartarized antimony administered with a view to its nauseating and relaxing effects, with tepid baths or demi baths. He advises, also, the local application to the os uteri of the extract of belladonna or of stramonium. If these means fail in causing a sufficient relaxation of the os uteri, and the cervix, instead of becoming obliterated, is forced down before the advancing head of the child, it becomes necessary to raise the os uteri in the intervals of the pains, and to support it during the continuance of the pain. To this end—

> "The index finger is to be applied just underneath the anterior lip of the os uteri, and, with its edge or palmar surface, pressure is to be made in the intervals of the pains, so as to push up the os uteri as high as possible, or the extremities of *two or three of the fingers may be used* in the same way. When a pain comes on, the tendency to descent is to be resisted, unless this be so strong as to require more force than it would be prudent to employ; in that case, the finger must gradually relax its counter-pressure and allow the descent to take place. But as soon as the pain goes off, the os uteri is to be pushed up again, and its descent is again to be resisted during the next pain. In this manner, acting with gentleness and caution, but at the same time with firmness and perseverance, the os uteri must be supported until it is sufficiently dilated to allow the head to execute its rotatory movement and emerge from under the pubis.
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> "The principle upon which this manœuvre acts does not appear to be well understood, even by those who have practiced it. The support given to the os uteri prevents it from prolapsing, to be *backed*, if the expression will be allowed, by the floor of the pelvis, and places it in a position that will permit a portion of the head to become insinuated within it during a pain. The finger is not used to stretch the os uteri, as many writers direct, but to hold it up that it may be dilated by the head, which can then be pushed by the uterine contractions lower than the level at which the os uteri is held. The head dilates the os uteri far better than the finger could, because it acts upon the whole extent of the cervix, whereas the finger could act only on the circle of the os uteri."

When, in the second stage of labor, the dilatation of the os uteri is completed, and the pains become expulsive, or even in the absence of efficient expulsive pains, in order to bring them on, it is the practice of Dr. Miller, and we believe the practice to be a correct one, to rupture the membranes and allow the waters to escape, in all cases without exception.

It is in the second stage of labor, according to our author, that the production of anæsthesia exerts its most beneficial effects by abolishing the pains of child-birth, which are then the most severe, and by quelling the violent nervous agitation which is now at its height, and at the same time removing that "certain painful looking-for" of anguish still to be endured, which is often more torturing to the parturient female than the actual pangs of parturition.

Dr. Miller informs us that he has been in the habit of administering chloroform for nearly ten years, in natural as well as in difficult labors; during which period he has given it in many hundred cases, but he is not aware that, in a single instance, any injurious effect has followed its employment.

> "I have occasionally known it to diminish the energy of the uterine contrac-

tions, and lengthen the intervals between them to such a degree as to make it expedient to suspend its use for a time or altogether discontinue it. But in these exceptional cases no harm resulted, and when the anæsthesia passed off—which it did in a short time—the labor resumed its course and progressed as though it had suffered no interruption."

Dr. Miller believes that the beneficial influence of anæsthesia is not confined to the parturient state, but extends also to the puerperal. His patients who had previously been delivered without chloroform have often remarked, without prompting or questioning, that after they had been subject to its influence, "they felt very much better than in their former confinements, having little or none of the muscular soreness and stiffness, or the fatigue and exhaustion which they were before accustomed to feel;" while Dr. Miller is convinced also that their convalescence is altogether better.

Inasmuch as we possess in the *ergot* a very certain agent for the production of uterine contractions, the question very naturally presents itself, May it not be beneficially resorted to, in order to overcome inefficient action of the womb, when this occurs during the second stage of labor? Whenever the os uteri is fully dilated, the vagina and vulva are relaxed and moist, the presentation being natural, or such as offers but slight impediment to the birth of the child, and there is at the same time no disproportion between the presenting part and the pelvis, there can be no doubt but that under such circumstances the ergot may be safely employed to excite uterine contractions, when these are suspended, irregular, or inefficient; but in no instance in which any of the foregoing conditions for a prompt termination of the labor, under efficient uterine contractions, are absent, should the employment of the ergot be permitted. In the absence of either of them, the powerful and continued contractions of the uterus produced by the ergot will most certainly prove destructive to the child, while at the same time they will endanger also the life of the mother. When, in any case, there is the slightest doubt as to the entire safety of the employment of ergot, it should invariably be abstained from.

Under such circumstances, Dr. Miller recommends, with an endorsement of their efficiency, a resort to the same manipulations that are recommended by him in the case of insufficient action of the uterus occurring in the first stage of labor.

We will here repeat the remark we have already made, which is, that in the hands of the cautious and experienced practitioner, the manipulations just referred to, as well as others recommended in different parts of the treatise under consideration, will very generally be attended with unquestionably good results; but when heedlessly resorted to by the rash and inexpert, they may, on the contrary, be productive of serious mischief.

When, in the course of labor, impotent action or complete inertia of the uterus sets in, as the result of exhaustion from the long continuance of the parturient efforts, the question as to the necessity of artificial delivery comes up for consideration and decision. Its correct solution must be founded upon the unquestionable evidences present of uterine impotency, the condition of the patient, and the probabilities of the labor being terminated with perfect safety to both mother and child without manual or instrumental aid. It would be unwise to wait until the last moment before resorting to the latter,—until the urgency is extreme and the chances of success materially diminished. Dr. Miller lays down the correct general rule, that in all cases in which the evidences of the impotency of the uterus to accomplish the delivery of the child are unquestionable, the earlier that artificial delivery is resorted to, provided it can be effected with facility and safety, the better it will be for both mother and child.

> "Suppose, for example," he remarks, "the head of the child is presenting and has ceased to advance, while the uterus has evidently become impotent; suppose, moreover, this head is within easy reach of the forceps, and can be delivered without risk or additional pain to the mother, what would be the use of waiting until we are driven to the operation? But, if delivery be not so easily and safely practicable, prudence requires that it should be deferred until the necessity of it is more pressing,—so pressing that, in our judgment, it is better to incur whatever risk the operation may involve than wait longer."

On the subject of instrumental delivery,—the particular cases and conditions of labor in which a resort to it is proper and prudent, with the manner in which it is to be performed, according to the particular presentation and position of the child, and, also, the particular circumstances which, in each, preclude the possibility of the labor being completed with safety to the mother and child by the unaided action of the uterus,—the teachings of Dr. Miller are, upon the whole, particularly sound and judicious. His instructions for the application and management of instruments under the several circumstances in which they may be demanded are plain, simple, and correct, and as clear as it is possible to render such instructions by printed descriptions, aided by well-executed pictorial illustrations.

In cases of puerperal convulsions, Dr. Miller considers that there are two leading indications to be fulfilled, namely, to guard, by the judicious detraction of blood, the important vital organs, especially the brain, against the danger of overwhelming congestion during the convulsive paroxysms; and, secondly, to relieve promptly the womb by the forced delivery of the child. He very properly condemns the profuse and repeated bleedings, so commonly recommended in cases of puerperal convulsions, as both useless and mischievous: he would restrain the emissing of blood within such limits as are sufficient to place the blood-vessels in a condition to bear the stress laid upon them by the successive convulsive paroxysms. The fulfilment of the second indication, the early relief of the uterus from its contents, he believes to be of such imperative necessity that he lays it down as the duty of the obstetrician, in cases in which the condition of the os uteri will not permit the forceps to be applied, to deliver by craniotomy, whether we are certain or not of the death of the child, and thus get rid without delay of "the cause that sustains the convulsions," without the necessity of allowing hours to pass by while waiting for the os uteri to become sufficiently dilated to permit of delivery by the forceps or by turning.

> "It is not recommended," he observes, "to have recourse to craniotomy in every case of parturient convulsions so soon as the operation is practicable. Not so; for it may be that there is no such urgent and instant necessity as to justify the operation. But if it be otherwise, and there are just grounds for our worst apprehensions, while from the tedious manner in which the dilatation of the os uteri is going on it is wholly uncertain how long we must wait before delivery can be accomplished by the forceps, then the perforator should be used, even if the child be alive."

We most positively dissent from both the positions here assumed by Dr. Miller, namely, that the presence of the child in utero is always the cause by which the convulsions are kept up, and that there is, in consequence, an imperative necessity for immediate delivery, even when to effect it the life of the child must be sacrificed.

We have very seldom known the convulsions to cease upon the expulsion of the child, while some of the most violent cases we have ever met with did not commence till after delivery. When convulsions occur previous to or during labor, with a favorable presentation, we are always able, by the judicious use of anæsthetics, so far to suspend the convulsive paroxysms as to allow sufficient time for the natural progress and termination of parturition; or, at least, for the os uteri to become relaxed and dilated to an extent sufficient to allow of delivery being accomplished by the forceps, and that without increasing in the slightest degree the danger of the mother.

The operation of turning and delivery by the feet, let it be ever so cautiously and skilfully performed, is one that is admitted on all hands to be liable to entail upon the parturient female no trifling danger, either immediate or remote. In view of this fact, Dr. Miller would restrict it absolutely to cases of shoulder presentation. Here, as the only operation adapted to relieve the case of its difficulties, he would have it invariably resorted to so soon as the character of the presentation is detected and the os uteri is in a condition to permit the safe and easy introduction of the hand. Dr. Miller is persuaded that cephalic version, even when practiced according to the correct and scientific plan pointed out by Dr. Wright, of Ohio, is of very limited application, it being only practicable in those cases in which the labor is in its first stage, the os uteri barely dilated, the membranes entire or but recently ruptured, the uterine contractions not very powerful or decidedly expulsive, and the shoulder not yet impacted in the pelvis. The following are his conclusions in regard to the comparative merits of the two plans of version,—the cephalic and podal:—

> 1. "In simple cases of shoulder presentation, either cephalic or podical version may be practiced, the former being preferable (provided it can be accomplished) on account of the greater probability of saving the child.
>
> 2. "While cephalic version is not absolutely impracticable in complex, and even complicated cases of shoulder presentation, it is more difficult of performance and fully as dangerous, both to mother and child, as podalic version in one or other of its forms.
>
> "But granting, for the argument's sake, that cephalic version is in its ultimate results as eligible as podalic version, still I should contend that in complex, much more in complicated cases, it ought never to be had recourse to, because the sufferings of the patient are uselessly protracted by it. Even if there be not exhaustion of the uterus, it is impossible to know beforehand, in any such case, whether the child will be expelled by the natural powers or require to be delivered by instruments, thus subjecting the patient to the combined hazard of manual and instrumental delivery."

The closing topic of the last chapter of the treatise is the cause, consequence, and proper management of flooding subsequent to delivery. On this subject, the views and practical directions of the author are particularly sound and judicious. It is true that his estimate of the value of ergot as a hæmostatic in cases of post partum hemorrhage is very much below what our experience of its effects has taught us to form of it. Dr. Miller considers its operation to be too precarious to justify us in relying on it to the neglect of more certain and reliable means.

Flooding, when it occurs subsequently to delivery, is always of too formidable a character to warrant the neglect of any of the means adapted to arrest the discharge of blood, or which may concur with other remedies in effecting this object,—of whatever agent within our reach that will produce prompt, complete, and permanent contraction of the uterus. This is, in fact, the chief indication to be fulfilled; until it is, the patient is at any moment in danger of a return of the flooding to even a greater extent than previously. We are acquainted with no other agent that will so certainly excite uterine contractions with the same degree of promptness and to the same extent as ergot. So important a remedy do we esteem it to be for the control of post partum flooding, that we must insist upon the propriety of its administration in every case in which, subsequent to delivery, uterine hemorrhage is either threatened or has already commenced.

In the treatment of post partum flooding, Dr. Miller very properly condemns the use of the tampon, as a most hazardous expedient. It may control the issue of the blood externally, while this continues to pour from the vessels and collect in the uterine cavity, endangering the life of the patient to as great an extent, perhaps, as though permitted to flow externally. Let the blood, says Dr. Miller, have an unobstructed channel, the danger of our patient will be then more apparent, and we incited to more earnest efforts to save her from impending death.

We here close our notice of the work before us. Of its general value we have formed, it will be perceived, a very high estimate. We bespeak for it such a reception on the part of the American medical profession as will render, before long, the preparation of a second edition necessary; in which the omissions we notice in the present can be supplied, and the treatise rendered complete in all its parts; while, at the same time, the few flaws which now mar its general excellence can readily be removed.

ART. IV.—*The Dispensatory of the United States of America.* By GEORGE B. WOOD, M.D., and FRANKLIN BACHE, M.D. Eleventh edition; carefully revised. Philadelphia: J. B. Lippincott & Co. 8vo. pp. 1583. 1858.

WE have great pleasure in announcing a new edition, the eleventh, of this world-wide renowned work since its first appearance in 1833. To say anything in commendation of it, at this late period, would be entirely superfluous, since it is to be found in the library of every intelligent physician in the country. In preparing the present edition, the learned authors have spared no pains to add to it every discovery and improvement of any value in materia medica and pharmacy. Their object has been, as they have stated in the preface, to make the work a mirror reflecting the existing state of these two sciences; and no one acquainted with their labor can doubt the success of the enterprise. Large additions have been made to materia medica and pharmacy within the last few years, and the reader can form some idea of the labor expended in the preparation of the work, when he is informed that it contains one hundred pages of new matter.

ART. V.—*Plates Illustrative of Wilson on Diseases of the Skin.* Fourth edition. Philadelphia: Blanchard & Lea. 8vo. 1857.

IN the September number of this journal we introduced to our readers the fourth edition of Mr. Wilson's work on the Diseases of the Skin, and we have just received from the distinguished publishers a copy of plates illustrative of the various affections therein described. These plates, of octavo size, are nineteen in number, and comprise numerous figures, most of them colored in the highest style of the art. In the present edition are included Mr. Wilson's drawings of constitutional syphilis and syphilitic eruptions, thus rendering the work more complete and valuable. The letter-press, although concise, is sufficiently clear and expressive of the objects which it is intended to fulfil. Knowing how little attention is paid to this class of affections by the physicians of this country, we can safely recommend this work to their consideration as a valuable clinical guide.

ART. VI.—*The Diseases of Children.* By FLEETWOOD CHURCHILL, M.D., &c. Second edition. Dublin: Fannin & Co. 8vo. pp. 782. 1858.

THE appearance of a new edition of this work so soon after the publication of the first, affords sufficient evidence of the estimation in which it is held by the profession. Its predecessor received the commendation of most of the medical press, both of Great Britain and this country, in the latter of which it was honored with a reprint by Messrs. Blanchard & Lea. Although the profession of the United States was already in possession of able treatises on diseases of children by Condie, Meigs, and Stewart, yet the work of Dr. Churchill was calculated, by its great erudition and completeness, to fill a void that had long been felt in our medical literature on this subject. Without laying any claims to originality, it brings before the reader an amount of information not comprised in any similar production in the language. The amount of labor consumed upon its production can only be conceived by those who have been similarly occupied, every work of note published within the last twenty-five years in the different languages of Europe, having been laid under contribution for the illustration of its topics. The material thus derived has been used with consummate skill, and the result has been a work creditable alike to the author and his country. The present edition comprises one hundred and thirty pages of new matter, and the discussion of a number of new topics not included in its predecessor. The most important of the new chapters treat of syphilis, phthisis, and paralysis.

Original Communications.

ART. I.—*On the Perceptive Power of the Spinal Cord, as manifested by Experiments on Cold-blooded Animals.* By GEORGE PATON, M.D., of Galt, Canada West.

IT is considered a well-established fact in metaphysics, that the nerves are the medium through which we obtain a knowledge of the external world—that the impressions produced on their extremities are conveyed by them to the brain, the seat of the mind—and that an animal, by means of its senses, becomes acquainted with the various objects by which it is surrounded. And physiologists have considered it of much importance to ascertain if the power of recognizing impressions be connected with the spinal cord, or exclusively seated in the brain: in other words, what is the real state into which an animal is reduced after removal of its cerebral lobes? M. Flourens, in his experimental researches into the functions of the nervous system, has devoted much attention to this question, and endeavored to give it a precise and definite form. He carefully removed the cerebral lobes of an animal, and observed the phenomena. After the operation, the animal appeared to be thrown into a state of stupor, and no longer manifested spontaneous movements. In the language of Cuvier, "the animal so mutilated is quite drowsy, and has no will of its own; it makes no spontaneous motion, but when struck or irritated it rouses itself as from a sleep. In whatever position it is placed, it preserves its equilibrium. If laid upon its back, it rises; it walks if pushed. When it is a frog, it jumps if it is touched; when a bird, it flies if thrown up into the air; it struggles if annoyed; if water is thrown upon its back it swallows it." An animal in this condition will live several months, if properly fed and protected, but its food and drink always require to be placed upon its tongue that they may be swallowed.

M. Flourens considers that an animal in this state neither feels nor perceives the stimulus to which it is subjected; that it has lost all sense of touch; and that the movements depend on a principle of excitability possessed by the spinal cord. From which he concludes that the cerebrum alone is the seat of sensation and perception. And in maintaining these views, he considers that the optic lobes or corpora quadrigemina are the continuation and termination of the spinal cord and medulla oblongata.

Dr. Marshall Hall proceeded further than M. Flourens in accounting for the movements of an animal deprived of its cerebrum. Pursuing the views that had been advanced by Prochaska respecting the reflex action of the spinal cord—that an impression on the extremities of the *afferent nerve* is conveyed by that nerve to the medulla, and reflected by the *efferent* or *motor nerve* of the part; and that this is the principle on which the movement is effected; he reduced this class of movements into a system, and illustrated their importance in the functions of the body. He showed that the contraction of the iris, the act of deglutition, the associated movements of sneezing, coughing, defecation, &c., all depended on the principle of reflex action; that it was the impression on the *afferent* or *sensory nerve*, conveyed to the medulla and reflected by the *efferent* or motor nerves of the part, by which the movement was produced, each being excited by its appropriate stimulus, as contraction of the iris by the application of light to the eye, &c. But he generalized these views so far as to maintain that this is the character of all those movements that are witnessed in decapitated animals; and concluded that the spinal cord is a distinct system in itself, and the seat of reflex action; and that the brain is the centre of the senso-volitional movements; each organ performing its specific function in the animal economy.

M. Granger endeavored to corroborate the views of Dr. Hall, by his investigations into the structure of the spinal cord. He stated that he could trace some of the fibres of the anterior and posterior roots of the nerves into the cineritous matter of the cord, which he considered to be connected with the reflex function; and that the other nervous fibres did not enter the substance of the cord, but proceeded, as the medullary fibres, to the brain, and that these constituted the senso-volitional system. Hence, each spinal nerve contained both reflex and senso-volitional fibres.

1. In reference to these views, we may state that the theory of a true spinal system is decidedly opposed to the movements performed by cold-blooded animals after removal of the cerebrum. We shall afterwards see that these movements indicate a power resident in the spinal cord distinct from that of reflex action.

2. There are circumstances connected with the reflex movements of the body which do not coincide with the theory of Dr. Marshall Hall.

We admit that an important class of movements of the body depend on reflex action; that contraction of the iris, deglutition, respiration, &c., are produced by the impression on the *afferent nerve* being conveyed to the medulla, and reflected by the efferent or motor nerve of the part; and that these movements take place independently of sensation. But if by the reflex function it be understood that the motor nerve is always excited by the afferent nerve without the intervention of sensation, then we dissent from the view, for there is a class of reflex movements into which sensation appears to enter as an essential element, as necessary to constitute the act.

The associated movements of sneezing, coughing, the closure of the eyelids on the application of a strong light to the eye, &c., are of this character, the impression being conveyed by the sensory nerves of the cord to the medulla and reflected by the motor nerves. And this implies a connection with the sensory columns of the cord—a doctrine opposed to that of a true spinal system. Besides, the muscles of voluntary motion seem susceptible of reflex action, through the medium of sensation, as when the limbs start up involuntarily by being suddenly pricked with a pin or similar mode of irritation. Indeed, what appears to constitute a reflex movement, is that the impression, on being conveyed to the medulla, should be immediately reflected by the motor nerve independently of the will. It is the manner in which the motor nerve is excited, and not the mode in which the impression is conveyed, on which reflex action depends.

At the same time there can be no doubt that cases have occurred, where, from disease of, or pressure on, the spinal cord, the patient had lost all power of voluntary motion in his limbs, and reflex action could be excited in them by irritation of the integuments. Some of these cases have come within our own observation, and others have been related by different members of the profession, in which, after the loss of sensation and voluntary motion in the lower extremities, the limbs started up involuntarily and continued to be agitated for some time, by tickling the soles of the feet. And during this period the patient neither felt the irritation, nor the application of heat or cold to the integuments. But in all these cases it was only a part of the cord that was affected; and the movements are very different from the perceptive movements manifested by an animal after removal of the cerebrum.

The theory of an excito-motory system, brought forward in explanation of these facts, has been considered premature, and as by no means resting on data sufficient to command the general assent of the profession. It does not follow, as we shall afterwards see, that, because reflex movements may be excited in the lower portion of the cord in cases of disease, that this is the specific function of the whole of the cord, after ablation of the cerebrum. And the investigations into the structure of the spinal cord, which were formerly adduced in support of these opinions with as much boldness as if they had been mathematical truths, cannot be relied on, as they appear to have proceeded on previously assumed views, rather than to have been directed by strict observation and a rigid induction of facts. The recent microscopic observations of other physiologists respecting the structure of the spinal cord, differ materially from those propounded by M. Granger in support of Dr. Marshall Hall's theory.

Schrœder Van der Kolk, in his investigations into the minute structure and the functions of the spinal cord,* states "that several distinct vertical columns of multipolar ganglion cells exist in the cord, extending throughout its whole length; that they are most abundant in the anterior horns of the gray substance, then between the anterior and posterior horns, and lastly in the posterior horns themselves;" that they increase at the cervical and lumbar portions of the cord, where the relative plexuses of nerves are given off, and that a communication exists among the ganglion cells throughout the cord by fine nervous filaments.

He also states that the motor nerves take their origin from the ganglion cells of the cord; that the motor nerves spring from *the cord*, and especially out of the ganglion cells of the anterior horns; and that the anterior medullary fibres of the cord are the channels of communication between the brain and these ganglion cells, and by which the mandates of the will are conveyed to the motor nerves of the cord; "for the innermost longitudinal fibres can be seen to bend toward the gray substance and pass into the ganglion cells." And he considers that the sensory nerves of the cord give off one set of fibres which proceed directly to the ganglion cells, and that the other fibres ascend as posterior medullary fibres to the brain.

From this account of the minute structure of the spinal cord, it appears that *the whole of the motor fibres of the nerves* take their origin from the ganglion cells of the cord, and that no portion of them arises from the cerebrum, as was formerly supposed; that the anterior medullary fibres are the medium of communication between the brain and the ganglion cells, through which fibres the influence of the will is conveyed to the motor nerves; and that the reflex action is produced through the medium of the fibres of the posterior spinal nerves that pass directly to the ganglion cells from which the motor nerves arise; but that the sensory nerve-fibres do not enter the substance of the cord, but ascend as the posterior medullary columns, and convey impressions to the cerebrum as the seat of perception. But he considers it very probable that sensation has its proper centre in the medulla oblongata.

Dr. Lenhossek, in his researches into the central nervous system of man,† maintains that the primitive fibres of the root nerves, whether *motory* or *sensory*, simply traverse the white substance of the spinal cord, and that no portion of them bends itself upward to proceed to the brain, with the longitudinal fibres; but that they take their immediate origin from the ganglion cells, the purely motor fibres springing from the anterior horns, and the purely sensory fibres from the posterior horns of the gray substance, and communicate by means of the middle layer of the ganglion groups, as these are seen to dispense filaments in both directions. And he also states that the primitive fibres of the medullary substance are more slender than those of the roots of the nerves, and appear to issue at very acute angles from the gray matter, and pursue a longitudinal and parallel course uninterruptedly to the brain.

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* Anatomical and Physiological Inquiry into the Minute Structure, and the Functions of the Spinal Cord. By J L. C. Schrœder Van der Kolk. Amsterdam, 1854.

† New Researches into the Minute Structure of the Central Nervous System in Man. I. The medulla spinalis and bulbus rhachiticus. By Joseph V. Lenhossek, M.D., &c., Professor of Anatomy and Legal Medicine at the Imperial and Royal Lyceum in Klansenburgh. Vienna, 1855.

Other microscopic observers maintain similar views, not merely in reference to the spinal nerves originating in the ganglion cells of the spinal cord, but that the fibres from the ganglion cells pass into the longitudinal fibres of the white substance, and proceed, as the medullary columns, to the brain.

These researches into the structure of the spinal cord must, in a great measure, supplant the views of Marshall Hall and Granger, as they show that all the roots of the motor nerves, including the senso-volitional fibres, take their origin from the gray substance of the spinal cord. And though a discrepancy of opinion exists respecting a portion of sensory fibres proceeding to the cerebrum, or terminating in the spinal cord, and it must be a matter of great difficulty, from the delicate structure of that organ, to determine by experiment the specific functions of particular fibres, yet one thing is certain: these researches have advanced us an important step in physiological science, in showing us that the spinal cord is intimately connected with the volitional movements of the body.

But it is not the minute structure of the spinal cord that we have to determine in order to establish its perceptive power, though that is of great importance in itself, and may be urged in corroboration of the doctrine. But it is the specific functions of the cord as manifested by an animal after ablation of the cerebrum, or, in other words, the movements which an animal in this state is capable of performing. And we maintain that an element enters into these movements perfectly distinct from that of reflex action, and which cannot be accounted for on any other principle than that the animal manifests distinct power, and exerts a definite control over the muscles of voluntary motion in taking cognizance of the irritation to which it is subjected.

And in determining the character of a reflex as distinct from that of a perceptive movement, it is to be observed, that a reflex movement being produced by the impression on the afferent nerve conveyed to the medulla, and reflected by the motor nerve, always takes place in the same manner—admits of no change or variation—and may be termed a uniform sequence of that which preceded it. Hence there can be no evidence of design, nor of any determinate movement exerted at the moment to the attainment of a specific object; the adaptation of means to ends connected with these functions of the body being inherent in the structure of the part, and not dependent on the will of the animal.

But in perceptive movements, when the impression on the afferent nerve reaches the medulla, the motor nerve is excited by a distinct act of volition, and the movements performed are varied in accordance with the circumstances of the case and the degree and mode of irritation; for the muscles on which these movements depend are not limited or restricted in their action, but subject to the control of the will for the very purpose of accomplishing our desires and intentions. Hence they are termed the muscles of voluntary motion—engaged in walking, leaping, the varied and combined movements of the limbs—of the larynx, &c.; and every specific act performed by this class of muscles, in which we witness design and adaptation of means to ends, must be considered the effect of a controlling power or agency, as there is nothing in the structure of the parts to account for it.

On the other hand, when reflex action is excited in the muscles of voluntary motion, as in the limbs by irritation of the integuments, the movements consist of a successive contraction and relaxation of the muscles of the part, similar to what we observe in convulsions or the application of galvanism; but there is nothing like design, or the attainment of a definite object in the movements.

From these statements, then, it will appear that in determining the character of the movements of an animal after ablation of the cerebrum, we must not limit our views to the existence or non-existence of sensation, which has too frequently been done by physiologists in discussing this question; for sensation, according to the strict and philosophical import of the term, expresses the mere feeling, or state in which a sentient being exists at the moment, without reference to the cause that produces it. And we maintain that we can have no evidence of sensation in an animal subjected to experiment, except so far as we observe proofs of perception or recognition of the stimulus. An animal may feel on being touched, but we can have no knowledge of the fact, unless it be manifested by the particular movements which it executes at the moment in response to the irritation, and this necessarily implies a certain degree of voluntary power exerted by the animal in regulating and controlling its movements to the attainment of an end—which phenomena we define by the term perceptive movements.

Another circumstance on which we must insist, of great importance in order to arrive at a proper decision on this subject, is, that we must base our views on strict observation and a rigid induction of facts. We cannot ascertain the functions of the brain or spinal cord, except so far as these are manifested by experiment or pathological research. And it is contrary to every principle of logic and sound philosophy to suppose that because an animal is deprived of its cerebrum it can give no evidence of perceptive power. We can assign no reason, so far as our investigations into the structure and functions of the nervous system are concerned, why the cerebrum should be possessed of this power, and not the medulla oblongata and spinal cord. The question is, What are the facts of the case? "The foundation of all human knowledge," says Mr. Stewart, "must be laid in the examination of particular objects and particular facts, and it is only so far as our general principles are resolvable into these primary elements, that they possess either truth or utility."

What, then, are the phenomena manifested by an animal after removal of the cerebrum, or brain? Have we evidence that it is capable of performing distinct perceptive movements?

Experiment 1.—I removed the cerebrum of a frog with great care, and observed the phenomena. Respiration continued. The frog no longer manifested spontaneous motion, but remained in a shallow vessel, amid a little water, with its hind legs drawn up, the posture that frogs assume when they rest; but on being irritated, moved with great vigor, and gave every indication of recognizing the stimulus. On being seized by the foot, it struggled much to be relieved, and on being freed, bounded from the grasp, and made several leaps before it became quiescent. On irritating the integuments of its left cervical region, it croaked; on repeating the irritation, it again croaked, and scratched the part with its left hind foot. On touching with the point of a needle the integuments over the right scapula, it raised up its right hind leg, and scratched the part with its foot. On continuing the irritation, it again raised up its right hind foot, and pushed away the instrument with force.

Experiment 2.—Removed the cerebrum of a frog with great care, and allowed it to remain quiescent till the effects of the operation had subsided. Respiration continued. The frog had lost the power of spontaneous motion, as it did not move from the place on which it was seated till irritated, but appeared most sensible to the touch, and gave every indication of recognizing a stimulus. When placed upon its back, it immediately turned upon its face, and made several leaps before it became quiescent. When I irritated slightly the integuments of its thorax on the right side, it pushed away the instrument with its right hind foot. On a stronger irritation being employed, it withdrew its body in the opposite direction, and leaped to a distance. When I compressed slightly one of the toes of its right fore foot, it withdrew its foot, and placed it below its abdomen. When I touched with the point of a needle the integuments of its left dorsal region, it scratched the part with its left hind foot. And when I touched with the point of a needle its right cervical region, it raised up its right hind leg and pushed away the instrument with its foot. In short, it comported itself as regards the sense of touch like an animal that had sustained no mutilation, the only difference being that a slight irritation was required to be employed before the perceptive movements were manifested.

Experiment 3.—I removed the cerebrum of a frog, dividing the medulla oblongata a little anterior to the origin of the par vagum. After the operation a few slight respirations were observed, which gradually ceased. I touched with the point of a needle the integuments of the right cervical region, and it quickly raised up its right hind leg and scratched the part with its foot. I irritated the integuments of its left dorsal region, and it raised up its left hind leg and pushed away the instrument with its foot, and then leaped to a distance, and made several successive leaps before it became quiescent. On irritating its right dorsal region, it withdrew its body in the opposite direction, and scratched the part with its right hind foot. In short, it gave every indication of recognizing the stimulus, and endeavoring to avoid it.

I have performed the same experiment on many other frogs with similar results. The animal, after ablation of the cerebrum, losing the power of spontaneous motion, but continuing most susceptible to every irritation, and performing distinct perceptive movements in response to a stimulus. And experiments on the alligator, where the phenomena can be witnessed on a much larger scale, are equally conclusive in establishing the same doctrine.

"A large alligator (four feet long) being decapitated,* the headless trunk, as on many former occasions, performed numerous actions, indicative of sensation, intelligence, and volition. Resting perfectly quiet, deprived of all the special senses, it possessed only the general sense of touch, and responded in an accurate manner to all tactile impressions, even the simplest. No extreme agent, neither pricking nor fire, was required to elicit definite and defined movements. The slightest touch with the finger seemed to be perceived by the whole trunk, the tail, and limbs, as perceived by their movements. The animal seemed to be aware of the nature of the touching body, which, if producing little irritation, was borne without any violent efforts to escape from it. But fire, punctures, &c., called into agonized action the body, limbs, and tail. The body curved in a manner so as to recede from the offending agent, and the limbs were directed so as to remove it. From its actions, far more impressive than words, it was evident that it judged accurately, as to the degree, duration, and place of painful or painless impressions."—*Dr. Dowler on Nervous Action.*

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* The division must have been made about the origin of the par vagum, as Dr. Dowler informs us that respiration, though irregular, continued actually 30 minutes by estimation, after removal of the encephalon.

It is a well-known fact in physiology that respiration continues in a decapitated animal only when the origin of the par vagum has been respected.

"Si ce point est detruit, tous les mouvements respiratoires sont abolis sur-le-champ; s'il reste uni à l'encephale, ce sont le mouvements respiratoires de la tête qui survivent; s'il reste uni à la moelle épinière, ce sont, au contraire, les mouvements respiratoires du trônc qui survivent.

"Et enfin, pour ce qui est des reptiles en particulier, ces animaux ne continuent de *respirer*, et de vivre après la decapitation, qu'autant que la section passé sur le crâne et non derrière le crâne, c'est a dire, en autre termes, et en termes plus précis, qu'autant que l'origine de la huitième paire a de respectée, et qu'ayant ete respectée, elle est, de plus, restée une à la moelle épinière."—*Recherches Expérimentales sur les Proprietes et les Fonctions du Système Nerveux. Par P. Flourens*, pp. 424–425.

We perceive from these experiments that an animal is capable of perception and the manifestation of volition, after being deprived of its cerebrum; and that it is not necessary that the impressions received by the nerves should reach the cerebrum that sensations may be produced.

The animal leaps on being touched, or raises its foot and scratches the part of its integuments that is irritated; or, if an alligator, directs its limbs to remove the cause of irritation, and judges most accurately concerning the stimulus to which it is subjected. And to assert that these are not senso-volitional movements, is to give a new definition to the term. There is in these acts—1, an evidence that the animal has perceived the impressions made on the extremities of the sensory nerves; and 2, a proof that it exerts distinct control over the muscles of voluntary motion, in regulating and directing them to the attainment of a specific end. Because if the animal did not feel, and had no power of volition, why should one limb be raised up, in this manner, in preference to every other, to the part that we touch with the needle? Or why should the hind foot be moved forward to the identical spot in the dorsal region that is irritated? Movements perfectly similar to what we observe in other animals, when a particular part of their body is irritated.

It is no doubt true that the animal has lost the power of spontaneous motion, as it does not move till irritated. And it does not retain the recollection of impressions received by the nerves, as it does not learn to avoid the obstacles to its progress—functions which it is admitted belong to the cerebrum. But, in the absence of these powers, the animal evinces such design, and adaptation of means to ends in resisting every irritation applied to its body, that we must conclude it is capable of distinct perceptive movements.

From these experiments, we deduce the following doctrines:—

I. That the spinal cord enables an animal to feel, and manifest its perceptions by performing definite and combined movements in response to a stimulus.

II. That the cerebrum is superimposed on the spinal cord to act on the possession of these powers, and as the seat of memory and the intellectual faculties.

III. That the associated movements of deglutition, respiration, sneezing, coughing, contraction of the iris, &c., depend on the principle of reflex action possessed by the spinal cord.

It will be observed, from the preceding experiments, that our researches have been confined to the functions of the entire spinal cord, and not of a separate section; as our object has been principally to ascertain if the movements performed by an animal after removal of the cerebrum be illustrative or not of the theory of an excito-motory system. And we consider that the phenomena we have described satisfactorily establish the doctrine that cold-blooded animals, after ablation of the cerebrum, are capable of sensation, and of performing distinct perceptive movements, on the application of a stimulus. And this is the proposition for which we contend.

But another important subject presents itself for consideration: what is the particular seat of this power? Does it belong to the medulla oblongata and upper portion of the spinal cord?

From the experiments we have performed on this subject, in dividing the spinal cord immediately behind the cranium, and removing every portion of the encephalon anterior to this, destroying at once the function of respiration, we maintain that the movements performed by an animal in this condition, on being irritated, afford distinct evidence of perceptive power.*

A very important effect is produced by this division of the spinal cord, as the animal has now lost the power of progressive motion, and is unable to move about and change its place on being irritated. In the former experiments, we have seen that on removal of the cerebrum, the animal loses the power of spontaneous motion. But on division of the cord immediately behind the cranium, the animal is no longer able to perform progressive motion,* but remains in the situation in which it is placed, with its hind legs drawn up, the posture that frogs assume when they rest;† but continues to recognize every irritation applied to its body. Its movements are of a special and determinate character, and identically the same as those which we have described in the preceding section, but performed with less power and energy; while it is also acknowledged that reflex action may be distinctly excited.

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* We may state that in cold-blooded animals, the medulla oblongata is situated at the posterior part of the cranium, and even out of the cranium. In frogs the par vagum is the last pair of cerebral nerves; and the first pair of spinal nerves, and a branch from the second pair, perform functions similar to the par vagum, being distributed to the tongue and the larynx. So that this portion of the spinal cord appears analogous to the medulla oblongata in the higher order of animals. This is still more the case in salamanders.

"Dans la grenouille, l'origine de la huitième paire est place tout-à-fait a la partie posterieure du crâne, a une ligne à peu près en arrière du cervelet.

"La seule difference qui se trouve, sous ce rapport, entre les animaux a sang chaud, et les animaux a sang froid, est que, dans les premiers, *ce point* est place assez avant dans l'interieur du crâne, et qu'il est, au contraire place tout-à-fait à la partie posterieure du crâne, il presque hors du crâne dans les seconds."—*Flourens.*

These phenomena, however, have been more frequently viewed as a proof of the existence of sensation than of perception. Accordingly, this is the view which Schrœder van der Kolk takes of the subject, when he considers that the medulla oblongata is the seat of sensation. But, as already stated, we do not believe that we have any proper criterion for determining the existence of sensation in animals subjected to experiment, except the manifestation of perception. For the movements of an animal are the signs by which its feelings and sensations are manifested to us, and we can only properly determine that there is sensation, when we have distinct evidence of perceptive power. And this, we conceive is afforded us by the following experiments.

Experiment 1.—I divided the medulla oblongata of a frog immediately behind the cranium, and reviewed every portion of the encephalon anterior to this. Respiration ceased. Having allowed the frog to remain quiescent for a short time, till the effects of the operation had subsided, I irritated the extremities when the movements appeared most characteristic of design and adaptation. But the irritation caused the frog to perform progressive motion, as in the former experiments, so that a particular effect was produced by this division of the cord, viz. that the animal had lost the power of locomotion, and was unable to move from the place where it was sitting, as was the case with frogs when merely deprived of the cerebrum. I irritated, with the point of a needle, a toe of its left fore foot, and it quickly withdrew it and placed it below its thorax. I compressed with the point of the forceps a toe of its right fore foot, and it raised up its shoulder and endeavored to withdraw its foot, but being retained, it placed the toes of its right hind foot over the point of the instrument, and threw its body in the opposite direction. After a short interval, I irritated the integuments of its left dorsal region, and it scratched the part with its left hind foot.

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* I may state that these experiments always succeed best early in spring, when the animal has just left its winter quarters, as its physiological condition of a cold-blooded animal is then particularly developed.

† Je coupée la moelle allongée en tracers, sur une grenouille. J'avais porté l'instrument sur la partie posterieure du crâne.

Tous les mouvements inspiratoires furent abolis sur-le-champ.

L'animal, qui ne respirait plus, continua de vivre pendant plusieurs heures.

Si on le mettait sur le dos, il y restait. Il ne bougeait plus, ou presque plus, de lui-même; mais si ou l'irritait, il s'agitait; si l'on piquait ses pattes, il les reterait, etc.—*Flourens, Recherches Expérimentales, sur les Proprietes et les Fonctions du Systême Nerveux*, pp. 416–417.

Experiment 2.—I divided the medulla oblongata of a frog immediately behind the skull, and removed every portion of the encephalon anterior to this. The section was made over the origin of the first pair of spinal nerves which are distributed to the larynx and the tongue. Respiration instantly ceased. I allowed the frog to remain at rest for a short time, till the effects of the operation had subsided, and then observed the phenomena. I compressed a toe of its hind foot with the forceps, and it withdrew its foot and placed it below its abdomen. I irritated the integuments of its right dorsal region, and it raised up its right hind leg and scratched the part with its foot, and then raised itself up and made an effort to move forward. I seized the integuments of the right side of its abdomen with the forceps, and it raised itself up as if to withdraw the part, but being retained, it placed both the fore and hind leg of that side over the part that was irritated. On touching its cloaca with the point of a needle, it drew up both its hind legs over the part that was irritated. I irritated slightly the integuments of its left cervical region, and it raised up its left hind leg and scratched the part with its foot.

Experiment 3.—I divided the spinal cord of a frog, at the origin of the second pair of spinal nerves, which sends a branch to the larynx, and removed the encephalon, and portion of the cord anterior to this, as formerly. After a short time I applied irritation, and it was observed that only a slight movement could be produced in the anterior extremities, on account of the injury inflicted on the second pair of spinal nerves, which in the frog go to the fore legs. But on touching its hind foot with a needle, it immediately withdrew it from the source of irritation. On irritating the groin, it drew the thigh into closer contact with its body. On seizing the integuments of the side of its abdomen with the forceps, it moved forward the hind leg of that side and scratched the part with its foot. On irritating the integuments of its abdomen on the opposite side of its body, it moved forward its hind foot forcibly to the part, drawing its body in the opposite direction. I then seized the upper part of the dorsal region on the right side with the forceps, and it actually raised up its hind leg and scratched the part with its foot. I continued the irritation, and it repeated the movement. I next touched with the point of a needle the left dorsal region, and it raised up its left hind leg and passed its toes over the part.

I have repeatedly observed the same phenomena on a similar division of the spinal cord; the animal affording evidence of the recognition of the stimulus, by raising up its leg and scratching with its foot the part that was irritated. But an interval frequently required to elapse before the irritation was renewed, as the animal was weak, and its nervous energy soon exhausted. But on a lower division of the cord the phenomena became much less distinctly developed, and in the inferior portion of the cord we could seldom excite any but a few spasmodic movements of the limbs on applying irritation to the extremeties.

These experiments, we conceive, warrant us to conclude that cold-blooded animals, after decapitation are capable of recognizing a stimulus, and performing distinct perceptive movements, and that this power is seated in the medulla oblongata, or upper portion of the spinal cord. When an animal, after losing the power of locomotion, lifts its foot on being touched with a needle, and places it below its thorax or abdomen, or raises it up and repeatedly scratches the part of the integuments that is irritated, we must admit that it feels pain, and perceives the source of irritation. In short, that it manifests cognizance of the stimulus, by the definite and combined movements that it performs.

But this view of the subject has been objected to by some physiologists on the ground that as we have distinct evidence of design and adaptation of means to ends in many of the reflex movements of the body, such as contraction of the iris, the associated movements of sneezing, coughing, defecation, &c., so the movements of design manifested by a decapitated animal when it lifts its foot and scratches off any cause of irritation from its back, &c., may be of the same character. But there is a great and manifest distinction between the two cases. In the contraction of the iris, and the associated movements of sneezing, coughing, &c., we have an adaptation in the structure of the parts to the particular function which they perform, or an evidence of design in the Author of nature endowing these parts with the property of contracting on the application of a particular stimulus, and to the attainment of a specific end, just as we observe in the contraction of the heart, &c. But these movements afford no evidence of the adaptation being the design of the animal, as they are merely a uniform sequence or contraction of the parts from a particular irritation; every successive movement being a repetition of the former, and performed without change or variation, these cannot be considered a proof of perceptive power. But when an animal lifts its foot to scratch off any cause of irritation from its back, it does not result from any particular structure of the parts to that particular end, as that is only one of a multitude of movements which it might have performed; thence the evidence which it affords is that of being a perceptive act, or of design on the part of the animal. And this has universally been considered the data by which we determine the character of a perceptive movement in an unmutilated animal. When we, therefore, see a decapitated frog lift its foot in a similar manner, and scratch the part that is irritated, are we not bound to conclude that we have here as distinct evidence of perceptive power as in the former case, and that the movements are identically the same? For if this be not a perceptive movement, it undoubtedly bears all the characteristics of those that have otherwise been considered as such. And then we must admit that in a decapitated animal a definite end is accomplished by indefinite means, which certainly appears to be very remarkable.

There are other remarkable phenomena observed in experiments on the salamander, to which we must refer in corroboration of the views we maintain, and as decidedly opposed to the theory of an excite-motory system. The abettors of that system consider that after the spinal cord is cut off from all influence and communication with the brain, it is only reflex movements that can be produced, and that this is also the case with distinct sections of the cord. When, for example, the spinal cord of a higher order of vertebrated animal is divided below the brachial plexus, the animal is immediately seized with paralysis in its lower extremities; and the reflex movements excited in the part by irritation of the integuments, are of a general and indefinite character, and consist of alternate contraction and extension of the limbs. But when the spinal cord of a salamander is divided below the brachial plexus, the animal does not suffer paralysis in its lower extremities, but continues to move them as before, exerting distinct power over them, as in the act of locomotion, lifting up one foot and then the other, in accordance with the movements of its fore legs, as it crawls slowly along the surface of the table.*

If the excito-motory theory be based on fact—if it be a general law in vertebrated animals that the spinal cord is capable only of reflex action, how does it happen that the animal is able to perform the movements of locomotion after division of the spinal cord?

I took a salamander (*Lacuta aquatica,* Linn.) and divided the vertebræ and spinal cord immediately below the brachial plexus, which, in that animal, as in the frog, is the second pair of spinal nerves, and sends a branch to the larynx;* so that the animal retained complete power over the movements of its anterior extremities; and after allowing the animal to remain quiescent for a short time, till the effects of the operation had subsided, observed the phenomena.

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* Flourens, who holds the theory of the excitability of the spinal cord, admits that the salamander retains the power of locomotion in its hind feet, after division of the spinal cord below the fore arms, and endeavors to account for phenomena so much at variance with his views on the principle of reproduction of parts. But how could that principle confer this positive power upon the animal, if it were not seated in the spinal cord at the period that the section was made?—*Flourens, p.* 419.

The animal raised itself upon its fore legs and began to move forward, but did not drag its hind feet like an animal that had suffered paralysis, but supported its body on them as on its fore legs, and exerted them distinctly in the act of locomotion. I could observe no difference between these movements and those which it performed before the division of the cord, except that it now walked with less power and energy. I allowed the animal to remain at rest for a short time, and then slightly touched with the point of a needle the integuments of the right dorsal region, and it raised up its right hind foot and passed its toes across the part. On irritating the integuments of the left side of its abdomen, it raised up its left hind foot again and again to the part. After a short interval, I touched with the point of a needle the upper portion of the left dorsal region immediately below the division of the cord, and it raised up its left hind foot and passed its toes distinctly over the part. I continued the irritation, and the animal repeated the movement, raising up its left hind foot and passing its toes over the part.

Experiment 4.—I took a salamander (*Lacuta aquatica*, Linn.) and divided the vertebræ and spinal cord immediately below the brachial plexus, allowing the animal to retain perfect power over its anterior extremities. I then removed a small portion of the vertebræ from the lower division of the cord, so that the divided ends remained distinct and separate, and observed the phenomena.

After the animal had remained at rest for a short period, it raised itself upon its fore legs and commenced to walk, and exerted its hind legs most distinctly in moving along the table. It raised up one hind leg and threw it forward, while it retained the other in its position, in correspondence with the movements of its fore legs, as it performed locomotion. But it walked more slowly and with less vigor than before the division of the cord, and during this period the divided ends of the cord remained distinct and separate. I touched with the point of a needle a toe of its right hind foot, and it withdrew it and placed it along the side of its abdomen. I irritated the integuments of its right dorsal region, and it raised up its right hind leg and passed its toes over the part. I touched slightly with the point of a needle the integuments of the left dorsal region, a little below the division of the cord, and the animal raised up its left hind foot quickly to the part. I continued the irritation, and it passed its toes distinctly over the part; but it did not move its posterior extremities till a part of its integuments was irritated, and then it gave the most unequivocal evidence of recognizing the impression.

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* In salamanders, as in frogs, the upper portion of the spinal cord appears analogous to the medulla oblongata in the higher order of animals, as the first pair of spinal nerves and a branch from the second pair proceed to the larynx and the tongue.

I have performed the same experiments on many other salamanders with similar results,* and I have, after division of the spinal cord below the origin of the brachial plexus, removed the upper portion of the cord as far as the occiput, destroying all power of motion and sensation in its anterior extremities; and on touching with the point of a needle the integuments supplied with nerves from below the division of the cord, the animal has raised up its hind foot and passed its toes over the part. I have, after this, removed the encephalon, and on applying irritation to the integuments, as the side of its abdomen or dorsal region, the animal has still continued to recognize the stimulus—has raised up its foot and passed its toes distinctly over the part that was irritated. But the movements were weaker, and an interval required to elapse before they could be renewed. On a lower division of the cord, this power becomes less manifest, and the reflex action more particularly developed.

We are anxious to urge these facts on the consideration of the profession, as our object is to elicit the truth, and determine the specific functions of the spinal cord, irrespective of any particular views. And we think we are entitled to demand an explanation of these facts from the abettors of an excito-motory system, and to ask on what principle they account for the phenomena. The movements must either be reflex or they must not. If the former, then how do they differ so essentially from all reflex movements that have been recorded, as in none of these cases has the power of locomotion been retained on a separate and similar division of the spinal cord. And if they are not reflex, how do the supporters of the theory maintain their views after the manifestation of such phenomena? We, therefore, consider it an established fact in physiology, that in salamanders, after the division of the spinal cord below the brachial plexus or second pair of spinal nerves, the animal manifests recognition of an impression, and distinct power over the movements of its posterior extremities in locomotion.

If we maintain that the spinal cord is constructed on the same type in vertebrated animals, we must arrive at the general conclusion that there is a power resident in the medulla oblongata, or upper portion of the spinal cord, which enables an animal to recognize impressions, and perform movements in response to them, and that this power is seated lower in the cord in some classes of cold-blooded animals than in others.

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* In a paper which I published in the Edinburgh Medical and Surgical Journal, No. 167, I have given a full account of similar experiments performed on the salamander, and their results.

In conclusion, we may state that we have endeavored to establish our views on the principles of inductive science, by clear and distinct experiment, and we must interpret the laws of nature according to the facts observed, and not according to any preconceived opinion respecting the nature of mental phenomena. But these doctrines are in no respect opposed to the unity of mind, a subject much insisted on by some physiologists. For while the spinal cord enables an animal to receive impressions, and perform movements in response to them, it has no power to originate an action in itself—that belongs to the cerebrum. Hence the brain is superimposed on the spinal cord, to act on the possession of that power, and as the seat of memory and the intellectual faculties.

ART. II.—*Observations on the Supposed Relations between Epizootics and Epidemics, and Experimental Researches to ascertain the Nature of the recent Epizootic among the Swine, and the Effects which Diseased Meat may have on Human Health.* By GEORGE SUTTON, M.D., of Aurora, Dearborn County, Indiana.

IT is scarcely necessary to offer an apology for presenting to the medical profession a few facts in relation to the remarkable epizootic which has recently so extensively prevailed over different sections of our country, when we bear in mind that in all ages the opinion has been entertained that such wide-spread diseases among the lower animals arise from the same causes which spread pestilence and death among the human race; and that it is possible that the investigation of epizootics may throw some light upon the nature of the epidemic influence.

The long periods which sometimes occur between remarkable epizootics; the general opinion that such diseases are produced from the same causes which give rise to epidemics; the obscurity that still shrouds the causes which spread epidemics and epizootics over the globe; the uncertainty whether the epidemic influence extends over all animal life or is confined only to species; the little that is known of the nature of these widely extended diseases among inferior animals; whether they resemble any of the diseases to which the human system is subject, are certainly sufficient reasons to give to the investigation of epizootics an interest worthy of more attention from the medical profession than they have generally received. Epizootics and their etiology are as much parts of the great system of nature as the organization and physiology of animals; and while the energies of the most brilliant minds have been directed to unfolding comparative anatomy, epizootics and the different branches of comparative pathology appear to have received but a superficial attention; still it cannot be doubted that the investigation of these subjects may throw light upon human maladies, as well as enlarge our knowledge of the operations of those mysterious influences which spread diseases among the animal kingdom.

The accounts of epizootics which have come under my notice are extremely brief and unsatisfactory. We are informed by historians, that at different periods diseases have prevailed among inferior animals to such an extent as sometimes to even threaten the extinction of species. But what the nature of these diseases were, how nearly they resembled the epidemics which in many instances were prevailing at the time, and whether these accounts were not frequently exaggerated, (as we know there is a tendency in the human mind to magnify events which occur during pestilential periods,) are subjects of conjecture, and give to the investigation of epizootics at the present time additional interest. That periods remarkable for fatal diseases among inferior animals have, however, occasionally occurred, we have an abundance of testimony; and it is possible, although we have no record of such an event occurring within the historic period, that such wide-spread diseases may have brought about the extinction of some of the many thousands of extinct species of animals that we find beneath our soil or imbedded within our rocks. A brief review of some of the principal epizootics will not only show that they have been noticed in all ages, frequently during the prevalence of epidemics, and may probably afford some interest at the present time, when one of the most remarkable which has appeared within the last century has operated so extensively over the country.

We read in the Bible of the pestilence that was to cut off man and beast, and the murrain that was sent among the cattle. In the seventh book of Ovid's Metamorphosis there is an account of an epidemic that occurred sixty years before the Trojan war, in the island of Egina, in which the disease is represented as commencing first among birds, dogs, sheep, oxen, and then attacking mankind. Homer tells us that an epidemic that prevailed in the Grecian camp first commenced upon mules and dogs, and then attacked the human race. In Plutarch's Life of Romulus, we read of a pestilence which attacked cattle, and even affected vegetable life. Livy tells us that Rome was invaded three hundred years from its foundation by a terrible pestilence, in which cattle, as well as the human race, were victims.* Seventeen years later a similar mortality occurred among the cattle during the prevalence of an epidemic. Again, there was a similar occurrence in the year 353 from the foundation of Rome; also in the year 576.* Copland, in his *Medical Dictionary*, article Epidemics, considers this disease among cattle, noticed by Livy, as "having originated in malaria, and possessed the characters distinguishing this class of fevers." If this was the case, it is singular that along our Western rivers, where malarious diseases are so prevalent, and where they present the most malignant form, that cattle at the present day are not subject to such diseases; I am not aware that they are. The malady known as milk sickness frequently occurs on the high table-lands, where malarious diseases seldom if ever appear. Noah Webster, in his *History of Diseases*, has collected much information, not only in relation to epidemics, but also of diseases occurring among inferior animals. He tells us that "in the year 376 universal pestilence prevailed among men and cattle." He also tells us that in the year 810 "happened the greatest mortality among horned cattle that is on record. In some places in Germany it destroyed almost all the species." In the same work we are told that during the plague of 1348 "the death of animals, particularly sheep, marked this period. In England 5000 died in one pasture. The state of the air and water was so pestilential, that it is averred by historians that fowls and fishes had blotches on them." Hecker tells us, in his account of the "black death," "that as it advanced, not only men, but animals fell sick, and shortly expired, if they had touched things belonging to the diseased or dead." "Multitudes of dogs, cats, fowls, and other animals, fell victims to the contagion, and it is to be presumed that other epizootics among animals likewise took place, although the ignorant writers of the fourteenth century are silent on this point." Speaking of a fatal murrain that appeared among the cattle, he says: "Of what nature this murrain may have been, can no more be determined than whether it originated from communication with the plague patients or other causes." Copland, in *Medical Dictionary*, page 884, vol. i., states, upon the authority of Dr. Hodges, "that the plague of London, in 1665, was preceded by sickness among cattle." In 1669 a disease appeared among the cats at Westphalia. They died, Webster tells us, with an eruption on the head, accompanied with drowsiness.† He also tells us that "a mortal disease spread among cattle in 1682, in Italy, Switzerland, and Germany, that was called angina maligna, and of which cattle died in twenty-four hours. Authors relate that a blue mist appeared on the herbage of pastures. The disease moved about two German miles in twenty-four hours, and spread over Germany and Poland. Cattle at rack and manger were affected equally with those that grazed."‡ We are also informed in the same work, under the date of 1693, that "an epidemic catarrh began in Europe in October, being preceded by a similar disease among horses." Also in 1699, "a severe and fatal catarrh was epidemic, which carried off the young and robust, together with hard drinkers." At the same period, he tells us, "A cough was epidemic among horses in England and France." The same author tells us that in 1711, "a fatal distemper among cattle broke out, and raged with such violence in Italy as almost to destroy the species. It spread for three or four years, and horses perished by a similar pestilence. The writers who describe the disease represent it as a kind of plague." We are told in the same work, that in 1735 "a pestilential disease appeared in Devonshire, which swept away cattle and swine." We are told also, that between 1759 and 1763 was an unusually pestilential period, that during "this period fatal diseases carried off the cattle on the continent of Europe, and Toulon lost one-third of its inhabitants by an epidemic." "That in Europe the year 1763 was remarkable for diseases among various species of animals. In Denmark, an epidemic catarrhal disorder affected horses. In Madrid, a pestilence among dogs swept away multitudes: nine hundred died in one day. In Genoa, the poultry perished in a similar manner. In Italy, horses and swine fell victims to the pestilential principle. In France, horses and mules. In Sweden, sheep, horses, and cattle perished under the influence of the general cause." Again, "in 1785 canine madness spread in all parts of the Northern States; also, in 1797 a disease appeared among the cats, which swept away these animals by thousands." Copland says that during the epidemic in 1819, at New Orleans, "cattle, sheep, and horses were affected." (*Med. Dict.*, p. 884.) In the London *Lancet* for January, 1845, is a notice of the epizootic in Germany:—"This very disastrous disease originated in the plains of Russia, where it reigns epidemically. It is considered by the German veterinary surgeons to be a kind of contagious typhus. The various German States organized a strict quarantine on their frontier, but without success, for it has invaded Prussia and Austria, where it is said to be making great ravages." "In the eighteenth century several very fatal epizootics ravaged Europe from one end to the other. In 1754, such immense numbers of cattle were swept off, that several governments were obliged to forbid the destruction of any cattle capable of propagating the species." In the twenty-second number of the *British and Foreign Medico-Chirurgical Review*, is an interesting paper on the "Communicability of Cholera to Animals," by John Marshall, F.R.C.S. The writer presents many facts of much interest to the subject we have under investigation, as he enumerates the epizootics which have been supposed to be connected with cholera. He says: "In briefly reviewing our accumulated knowledge of reputed natural effects of cholera on the higher animals, we would in the first place dismiss, with the most passing notice, the numerous conjectures which are to be found in professional as well as non-professional records, as to the relation between the cholera and recent great and widely spread epizootics which have occurred in almost every country either before, concurrently with, or after the invasion of, the human pestilence. The widest and best known of these have been either influenza, like catarrhal, dysenteric, or pustular in their character, and identical with visitations previously well understood. The pleuro-pneumonia which has raged on the continent, and since 1838 in this country as so fatal an epizootic, and the typhoid disease of modern date, cannot, by any but the most rude analogy, be associated with human cholera."

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* Livy, lib. iii. 32.

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* Livy, lib. iv. 21, 25; lib. v. 13; lib. xli. 21.

† Hist. of Diseases, vol. i. p. 204.

‡ Ibid., p. 204.

"In the next place we would advert at somewhat greater length, but with equal reserve, to certain more partial or distinctly localized epizootics which have been noted in districts or towns of India and Europe, contemporaneously with the human pestilence. Thus in the Marquis of Hastings's army, in 1818, on the banks of the Sutlege, great numbers of oxen are said to have died suddenly during the prevalence of cholera, and from unknown causes. In the hilly districts, according to Chalmers, cholera being then very fatal in the towns, cattle died even in greater ratio than the people. In Rajpootana, according to Rankin, camels, and especially goats, died of diarrhœas and other ailments; and, on the authority of Mr. Searle, the same thing occurred in the Ladura and Cormbalosu districts. The disease among the poultry in Mr. Searle's compound may also be noticed here; and we are informed by an intelligent officer in the Indian army, that in 1832, at Rajahmundry, on the Godavery, all his ducks and geese died with symptoms which he and his native servants supposed to be truly choleraic. In Calcutta, in 1827, numbers of dogs died in the streets with choleraic symptoms; at Charcolly, also, fifteen-sixteenths of the dogs perished in the same way, during a second visitation of the disease, and at a later period half the dogs in Madras died with vehement vomiting and purging. At Macassar, in Amboyna, about the year 1818, monkeys, dogs, and oxen perished under similar circumstances; while quite recently (1849) horses died, as it was said, of cholera, at Penang, in great numbers. Merely glancing at the piscine mortality during the cholera period at Marienberg, which seems in one case to have been connected with the opening of a sewer into a pond; and alluding transiently, also, to the deaths of fishes in the rivers of Germany, and in the carp-ponds of the Departments of the Seine and Oise, in France, we find that at Astrachan, Moscow, and Warsaw, if not at Taganrog, in 1831, many examples occurred of poultry and other animals dying with symptoms resembling cholera. So, too, during the epidemic in Bohemia, according to Nekola, dogs died in a few days with diarrhœa and convulsions, preceded by loss of appetite and activity. In many parts of Austria the same circumstance was noted, and in Dantzic the cholera was ushered in by a canine epizootic of a choleraic form, so that dogs were said to be the first to indicate the approach of the disease. The Austrian Reports particularly mention poultry, dogs, and cats; and the French Report, by the Royal Academy of Medicine, on the Russian and Polish Epidemics, refers especially to the mortality among dogs. In 1832, cholera then raging in Paris, a sudden and singular mortality occurred among the poultry of the village of Choisi-le-Rois, situated on the banks of the Seine, about five miles lower down than Paris, though no cholera prevailed in the village at the time. The combs of the fowls attacked were cold and livid; a thready mucus appeared in the mouth and gullet; whitish liquid dejections were passed; the intestines were found red in patches, and the blood was thick and tarry. A similar epizootic was observed in two or three other villages in the Department of the Seine, and also on the Rhone. Since that period this disease of poultry has from time to time reappeared, but more particularly again in 1849–50, both in France and near Utrecht, in Holland, during the last cholera epidemic. Investigations and discussions as to its nature have been held by MM. Renault and Delafond Alfort, and the former concludes that the disease resembles cholera more than it does any other epidemic. It appears to be communicable by inoculation, and to affect rabbits also. In the winter and spring of 1831–2 a remarkable cholera-like epizootic, recorded by Professor Dick, occurred among cattle and horses in the neighborhood of Edinburgh, during the prevalence of cholera there, although it had somewhat preceded that disease in its earliest appearance. It is worthy of note that the same epizootic having apparently ceased during the cessation of cholera, reappeared near Leith, at the return of cholera in that place. Swine and dogs did not seem to be affected. The reputed horse-cholera, at Denny, in Scotland, in 1832, may also be alluded to in this place. In 1832–3, cholera then prevailing, a porcine dysenteric epizootic is on record in Ireland. In this category we would lastly include the unusual mortality, with more or less striking choleraic symptoms, among cats, goats, and dogs, mentioned in the journals of the times, as having been noted in Malaga, in 1834, and also in Algiers, Tunis, Cairo, and Constantinople, during the last epidemic visitation of the disease.

"Now, in reference to the majority of the examples which we have thus collected together of local epizootic diseases, more or less coincident with, and resembling cholera, it unfortunately happens that neither *the symptoms nor the post-mortem appearances have been made the subject of accurate medical investigation*. Hence we at once reject them as positive evidences of the effects of a cholera agent upon the animals concerned. And in regard even to those instances in which we have had the advantage of more precise medical observation, both before and after death, as in the case of the poultry by Mr. Searle and MM. Carrere Renault and Delafond, and in that of the epizootic described by Professor Dick,—instances which have been by some regarded as examples of cholera in animals,—we more than hesitate, on a careful consideration of the symptoms and morbid anatomy, to admit their sufficient analogy with the human disease." This summary of epizootics supposed to resemble cholera, increases the interest (when we see how little attention has been given to the subject) in the investigation of the present wide-spread disease among the swine ; a malady which has not only revived the name of cholera, but is generally believed by the public to be a species of this disease. The present period appears to be remarkable for the extensive prevalence of diseases among the inferior animals, for while the supposed cholera epizootic is prevailing among the hogs in this country, a fatal murrain is spreading among the cattle in Europe. An English paper says : "This terrible disease which is described by medical authorities as a pulmonary affection—a kind of induration of the lungs—differing in many respects from pleuro-pneumonia, highly contagious, and extremely fatal, has devastated part of Germany, and several smaller States bordering on the Baltic. Although it, or a similar deadly epidemic, scourged some of the midland counties in the last century, destroying entire herds with a rapidity resembling an aggravated form of cholera or plague in a populous city, yet, as a precaution against its introduction into the United Kingdom, an Order in Council was promulgated on Saturday last, prohibiting from that date the importation of cattle, horses, hoofs, and raw hides of cattle from certain infected districts on the continent. The importance of this timely and salutary measure, which has already been adopted by France, Prussia, and other European States, cannot for a moment be doubted, and we trust that, from our insular position, the distemper may be averted, and we be spared an impending calamity."

These brief notices of epizootics are sufficient to show that diseases among inferior animals, resembling epidemics in the extent to which they prevail, have occurred in all ages. They show, also, that it is highly probable that epidemic influences extend over *all* living bodies, and that there is an almost unexplored field for future investigation to ascertain whether the causes which spread an epidemic fever, the cholera, or influenza, over the globe, produce in the inferior animals similar diseases, or whether the influences which produce epizootics are the same as those which spread pestilence among the human race. It appears remarkable that in this age of research these subjects should have received so little attention. Wood, in his *Practice of Medicine*, article Epidemics, says: "The lower animals appear to be affected by epidemic influences, and seasons of unusual fatality among them have coincided with those in which the human race have suffered; but how far the effects are the same as upon man has not yet been accurately determined." Facts and observations on this subject would certainly assist in extending our knowledge of the nature of the epidemic influence. It requires no great degree of foresight to see that the time will come when epizootics, as well as every other phenomenon that is supposed to be either intimately or remotely connected with epidemics, will receive careful and thorough investigations. Subjects connected with human health will always receive the attention of mankind, and physicians will yet consider that it is not derogatory to their profession to enter the field, the stall, or the sty, and by the most careful and minute investigations endeavor to elicit from diseases of inferior animals facts that may throw light upon "the pestilence that walketh in darkness" and spreads desolation over the globe. The time will come, we repeat, when a remarkable epizootic will not be allowed to pass by, as we have witnessed within the last year, without investigation; not investigated alone by the veterinary surgeon, but by physicians, who will not only describe and record it as an event of the time, but trace its resemblance or relations to epidemics. With the full belief that such subjects are worthy the attention of physicians, I have collected a few facts in relation to our remarkable porcine epizootic, and endeavored to ascertain whether this disease was really a species of cholera, as it is supposed to be by the public, or whether it resembles any of the diseases to which the human system is subject. Should there be no notice taken of this malady among the swine—a disease which has borne the name of one of the most formidable diseases to which the human system is subject, and which has destroyed these animals by thousands and tens of thousands—it might be referred to at some future period as an evidence that cholera occasionally prevails among the inferior animals, or, at least, become as much a subject of conjecture as the epizootics that prevailed during the time of the "black death," or during some of the pestilential periods at Rome.

Authors have insinuated that epizootics have often "been exaggerated for the purposes of argument."* That some of the epizootics which occurred during the prevalence of a pestilence were exaggerated, is probable. When Plutarch tells us in his life of Romulus that, during the pestilence, "it rained blood in the city, so that their sufferings were increased with the terrors of superstition," we have our doubts with regard to the barrenness of cattle which he also represents as occurring. Gibbon, in alluding to this tendency to exaggeration, in his account of the plague which prevailed between the years 250 and 265, says that "our habits of thinking so fondly connect the order of the universe with the fate of man, that this gloomy period of history has been decorated with inundations, earthquakes, uncommon meteors, preternatural darkness, and a crowd of prodigies fictitious or exaggerated." We know that what might be looked upon as vast numbers of animals dying during the prevalence of an epidemic, might be considered at another time as scarcely worthy of notice, and that there is much uncertainty and doubt with regard to the extent to which diseases have prevailed among inferior animals. To obtain information on this subject from our recent epizootic among the swine, and prevent it from being charged as exaggerated, I have collected some facts of the extent of country over which this disease has prevailed. The information obtained, though limited and probably falling far short of the real extent of this malady, is yet sufficient to show that it is wide-spread, and must, like an epidemic, depend upon some general predisposing cause.

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* See Copland's Med. Dict., page 883.

I have seen notices of this disease prevailing in the States of Illinois, Kentucky, Indiana, Ohio, New York, Massachusetts, Pennsylvania, and Maryland. It has prevailed extremely in Indiana, particularly in Dearborn, Ohio, Ripley, Rush, Decatur, Brown, Bartholomew, Shelby, Johnson, Morgan, Marion, Boon, Posey, and Sullivan counties. It has also prevailed in Campbell, Kenton, Boon, Gallatin, Carrol, Breckenridge, Bullitt, Bath, Henry, Hendrix, Nicholas, Livingston, Union, and Crittenden counties, Kentucky. It has also prevailed in Hamilton, Butler, Clinton, Fayette, and Clermont counties, Ohio. Also, in different portions of Illinois, and very severely in Wayne, White, and Gallatin counties. It has also prevailed in the State of New York. The *Ohio Farmer*, for January 3d, 1857, quoting from the *Buffalo Republic* the extensive prevalence of the disease, says that, "in Western New York especially, we learn it has been very fatal, but is now over. In conversation with one of the most extensive dealers in the neighborhood, a day or two since, he informs us that about six weeks ago he lost about four hundred in a very short space of time. A distiller in Jordan, during the month ef September, lost fourteen hundred, which cost, in addition, over one thousand dollars to have them buried. In Rochester, at all the principal points, and even among the farmers, the mortality *has exceeded anything ever before heard of.* A butcher in this city not long since purchased five hundred dollars' worth of fat hogs, but they died so rapidly on his hands that he scarcely realized seventy-five dollars on the investment." "The *Worcester* (Mass.) *Spy* reports that many farmers in that city and vicinity are losing their swine by the mysterious and fatal disease known as the hog-cholera. In the southeast part of the town it prevails in a greater or less extent upon nearly every farm. In most cases the disease is traced to Western hogs that have been sold by the drivers the present season, and which seem to have communicated the contagion to the other inmates of the sties in which they have been kept. It is known that of many droves of Western shotes that have been sold at Brighton this season, and peddled about the State, nearly all have died." The disease has, no doubt, prevailed extensively in other parts of the country, of which I have seen no notice. In this section of the country it has been extremely fatal. Over portions of Dearborn County it spread from farm to farm, and some of our farmers lost from seventy to eighty out of the hundred of their hogs. At the distilleries the mortality has been very severe. I received information that more than eleven thousand died at the distillery in New Richmond, in the summer and fall of 1856. The owners of the distillery at Aurora inform me that they have lost between six and seven thousand. A gentleman informs me that he lost, in 1856, at Ingraham's distillery, in Cincinnati, from the first of August up to the twenty-fourth of October, one thousand two hundred and eighty-five,—losing 1152 out of a lot of 2408. Another gentleman informs me that at the distillery in Petersburg, Kentucky, he lost, from the first of June up to the eighteenth of October, 1856, 2576. I have also received information from several other distilleries where the losses were large. It was not, however, more fatal in the distilleries, in proportion to the number attached, than it was on the farms. The number of hogs that have died of this disease it is impossible to ascertain accurately. The *Cincinnati Gazette*, in giving the number packed at Cincinnati, for 1856–7, says, The crop was a short one by thirty-four per cent., as compared with the previous year, as shown by our returns, the accuracy of which has been again fully demonstrated. The whole number of hogs packed at this place last season and the former one compare as follows:—

1855–6	405,393
1856–7	344,512
Deficiency for 1857	60,881

The *Cincinnati Price Current*, for February 17th, 1858, states that "the whole number packed at all the places reported last year, was 1,818,468, and the previous year 2,489,502," showing a deficiency in the West for 1857, of 671,034. This deficiency may to some extent be owing to the partial failure of the corn crop; but we must bear in mind that the unusually high price of pork, and the fear farmers had of losing their hogs caused them very generally to dispose of all they could possibly make marketable. What number have been killed in the West during the last winter I have been unable to ascertain. I think, however, it will show a falling off in the ratio of increase which has taken place from year to year, corresponding with the increase of population and improvement of the country.

When the disease made its appearance in this section of country, in the summer of 1850, and we saw it spreading from farm to farm, the question was suggested whether it did not spread by contagion, for it was not known at that time (July) that the malady was contagious. Feeling much interest in watching the progress of this disease, from the large numbers of animals that were dying, I suggested to the owners of the distillery at Aurora, Messrs. Graffs, that we should try a series of experiments to ascertain the nature of the disease, and whether it was propagated by contagion. To this they readily assented, and as they were constantly receiving fresh hogs, there was a fine opportunity to make any experiments we saw proper. I am indebted to Mr. J. J. Barkman, of Aurora, for seeing that the following experiments, with the exception of the last, were carefully made:—The hogs on which the experiments were made, were known to be healthy.

1. Six hogs that had been exposed to the malady, by being in contact with diseased hogs, were put into a yard by themselves, and fed on slop and corn; on the fourteenth day from the time they were exposed to the disease, they were all unwell; three died within a week afterwards; the rest recovered.

2. Ninety hogs were exposed to the disease, then put into a yard by themselves, and fed on corn and water, (no slop given;) in thirteen days disease made its appearance among them, and they continued to die until sixty out of the ninety died.

3. Fifty hogs were put into a pen by themselves, and fed on slop; they had not been exposed to the disease; for six weeks they continued healthy.

4. One hundred hogs that had not been exposed to the disease were put into a yard by themselves, and fed on corn and water; for thirty days no symptoms of disease appeared among them. They were then put into a pen with diseased hogs; on the thirteenth day they began to show symptoms of the malady, and the disease rapidly spread among them, until forty died.

5. Thirty-three hogs, out of a lot of two hundred and sixty-three, were put into a pen by themselves; for six weeks they continued healthy. The remaining two hundred and thirty were put into a pen adjoining which were diseased hogs; in thirteen days disease made its appearance among them, and continued until one-half died.

6. Four young and healthy hogs were put into a pen in which, four days previous, diseased hogs had been; they were fed on corn and water. On the fourteenth day they were all unwell, and one died on the fifteenth

day, and in five days more they were all dead. This experiment shows that the infection may be retained in a pen several days.

7. I inoculated, on the 28th of October, five healthy hogs with the blood taken from the inflamed tissues of hogs that had died of this disease. On the fourteenth day (November 11th) they were all unwell, and all died with the exception of one. In three inflammation spread from the point where they were inoculated, along the skin and down the legs, which became very much swollen. I cannot say that this inflammation was caused by the inoculation, for it did not appear until the fourteenth day, and many hogs had this external form of disease.

From these experiments I think that we not only ascertained that this disease was infectious, but that the infection had a latent period of from twelve to fifteen days. Observations have since led me to consider the latent period as varying from twelve to twenty days. These experiments also showed that the hogs in the pens were not dying from strychnine in the slop. A statement was going the rounds of the papers about this time, that strychnine was used in making yeast at the distilleries, and was poisoning the hogs at these places in large numbers.

The manner in which this disease in many instances spread among the hogs from farm to farm, also showed most conclusively that it was infectious. One farmer had seventy-five hogs that he turned into a corn-field to fatten. These hogs had been exposed to the disease, had become sickly, and numbers had died. He bought thirty-six more; these were all healthy; they were put into the same field with the diseased hogs; in two weeks they were unwell, and numbers died. He bought forty-five more, all healthy, and put them in the same field. In two weeks they began to show symptoms of disease, and in a few days after a number died. Finding that he was likely to lose all his hogs, he sold fifty of the fattest that were left to the butchers in Cincinnati, at a reduced price, as diseased hogs. These hogs, it was said, were purchased for their fat, to be used in the manufacture of lard oil. After deducting the fifty he sold, he lost out of the one hundred and fifty-six, all but ten. A large number of facts could be given, if necessary, to show the contagiousness of the disease. Hogs that have been once under the influence of this malady, appear not to be susceptible to a second attack. Although placed in pens with diseased hogs, they continue healthy and fatten, and not a single instance can I find of hogs having this disease twice. There is reason to believe that this malady occasionally prevails at the distilleries in a mild form, as the old hogs at many of these places did not take the disease. But why it should suddenly have assumed so malignant a character, is as difficult to account for as that scarlatina, from being at one time the mildest of diseases, at another becomes one of the most malignant. On the farms the old and young hogs appear to be equally susceptible to the disease.

I endeavored to ascertain where this malady originated. I found, on inquiry, that on June 19th, 1856, one hundred and three hogs were brought to the "pens" at Aurora, from Ripley County; these hogs were unwell at the time, and some of them died the next day after they were brought in. The hogs in the pens up to this time were healthy. After these diseased hogs had been put into the pens, they continued to die from one to five a day, until about one-half died. In two weeks the disease appeared in the adjoining pens, and by the latter part of July the hogs were dying from ten to twenty a day. Nearly every hog in these pens—about four thousand—took the disease, and thirty-three per cent. died. After the disease appeared in a pen, (each pen contains a hundred hogs,) it generally was from six to eight weeks before the hogs that were left recovered. A gentleman who resides in Ripley County, on the second farm from where these hogs were brought, informs me that he lost eighty out of one hundred and fifty, and that his neighbor, who lives on the adjoining farm, lost about thirty, and that the disease was prevailing in this neighborhood before the hogs were taken to Aurora. On these farms, then, in this section of country, I think we may consider as one of the places in which the disease originated. I cannot ascertain how it was introduced into this neighborhood. These farms are in the interior of Ripley County, away from the river; not near the railroad, or any very public thoroughfare; nor within twenty miles of a distillery. I think that we have evidence, also, that it originated in several places in Boon County, Kentucky; that it also occasionally originates within the pens at distilleries, I think is highly probable. There were four thousand old hogs in the pens at Aurora while the malady was prevailing that continued healthy, which I cannot account for, except by considering that they had been under the influence of this disease at some previous period. The introduction of the disease into the pens at the distillery in Rising Sun, in Ohio County, was traced to hogs purchased of a farmer in Kentucky. This farmer was sued for damages. A gentleman who was fattening hogs at the distillery at Patriot, in Switzerland County, informs me that when he saw the hogs were dying in the country, he refused to buy more, and his hogs continued healthy. I mention these facts, as it has been stated in the public papers that this disease originates within the distilleries. I was inclined to believe so at first myself; I thought it was produced from the slop, and by crowding large numbers of hogs together. But I have become fully satisfied that although the disease may occasionally arise within the pens at distilleries, it also originates among hogs running at large on farms. When we see the possibility of large quantities of diseased meat finding its way into market—meat, too, of animals laboring under a most infectious malady—which may produce injurious effects upon human health, the causes which produce this disease become worthy of very careful investigation. And also, if by actual experiment we can ascertain what gives rise to infectious diseases among inferior animals, it may by analogy throw some light upon the manner in which this class of human diseases originates.

This disease, then, appears, like some of the human pestilences, to occasionally originate spontaneously, or from unknown causes, but when once produced spreads rapidly by infection. It was too widely extended to be spread over the country (on opposite sides of the Ohio River) by contagion alone. Although it appeared to prevail in certain localities or neighborhoods like cholera, still it differed from this disease in the infection having a more definite or uniform period before it became manifest.

On examining the books that treated of diseases of domestic animals, I found swine were represented as being subject to fever, leprosy, murrain, measles, jaundice, foul skin, mange, staggers, chacklins, swelling of the spleen, surfeit, lethargy, heavings, diarrhœa, quinsy, tumors, catarrh, and also tubercles. The descriptions of these diseases were extremely brief and unsatisfactory, and none of them represented the symptoms of this epizootic. At first I thought it was a malignant form of measles; but the symtoms did not resemble those described as belonging to this disease. From the diarrhœa, and the rapid manner in which in many instances it terminated fatally, the public gave it the name of cholera.

This disease presents a great variety of symptoms. In January, 1856, when this epizootic was at its height in this section of country, I published a short notice of it in the *Cincinnati Gazette*. The symptoms which I then described I have found upon a more extensive observation to be correct. The hog at first appears weak, his head droops, and sometimes in a few hours after these symptoms, diarrhœa commences. There is frequently vomiting. In some cases the discharges were serous and clay-colored, sometimes dark, also bloody, and mucous resembling those of dysentery. The urine at first was generally small in quantity and high colored, but as the animal recovered it became abundant and clear; this was one of the symptoms by which the men, who were attending the hogs at the distillery, ascertained that they were recovering. *In a large number of cases the respiratory organs appeared to be principally affected;* there was coughing, wheezing, and difficult respiration. In some instances the animal lost the power of squealing, and the larynx was diseased. There was frequently swelling of the tongue, and bleeding from the nose. In those cases where the respiratory organs were the principal seat of the disease, there was generally no diarrhœa or dysentery. In many instances the disease appeared to be principally confined to the skin; sometimes the nose, the ear, or the side of the head, were very much inflamed; the ear swollen to twice its usual thickness. This inflammation would spread along the skin sometimes over the eye, producing complete blindness. Sometimes one or more legs were inflamed and swollen, and the inflammation also extended along the body. The skin where it was inflamed was red and swollen. Some had large sores on their flanks or sides from three to six inches in diameter. In one instance, at the distillery, the inflammation extended along the fore leg, the foot became ulcerated and sloughed off, and the animal recovered. Some appeared delirious, as if there was inflammation of the brain. I examined the blood of four hogs which had this disease well marked; they were stuck, and the blood, arterial and venous, was caught in a bowl. It was cupped and presented a well-marked buffy coat. Death took place in from one to ten days after the attack. Sudden changes in the weather, particularly from warm to cold, appeared to increase the fatality of this disease. The average mortality of hogs that were in pastures or fed on slop, was from thirty-three to forty-five per cent., but it was frequently much more fatal if hogs were fed on corn,—in some instances ranging from seventy to eighty out of the hundred, and in some instances even higher.

I found, on opening the bodies of hogs that had died of this disease, that they all presented evidences of a diffusive form of inflammation. From sixty-seven hogs that I have examined, I found it was not confined to any particular tissue. Sometimes this inflammation was confined to one organ, in other cases it attacked several at the same time. The skin frequently presented patches of inflammation, and often had a purple appearance. In cutting through parts that were the most inflamed, the skin was swollen, and the cellular tissue was infiltrated with serum. Frequently, however, the skin was merely discolored, without any swelling whatever. The stomach was occasionally distended with food, and the mucous membrane in nearly every instance presented evidence of inflammation, sometimes extending over the whole stomach, at others only in patches; it was generally of a deep red color, thickened, and frequently softened. Sometimes it was covered with a viscid mucous, in other instances there was an effusion of blood into the stomach. The mucous membrane of the small or large intestines, where there had been diarrhœa or dysentery, presented in all instances evidences of inflammation; in patches it was red, thickened, sometimes softened, and occasionally ulcerated; where there had been dysentery there was generally bloody mucus found in the large intestines. The bladder generally contained urine; sometimes its mucous membrane was inflamed, and in one instance there was an effusion of blood into this organ. In a large number of cases I found evidences of peritoneal inflammation, such as redness of this membrane, effusion of turbid or bloody serum, adhesions between the intestines, and between the intestines and sides of the body. In three instances blood was effused into the peritoneal cavity—in one instance more than a quart; it appeared in this case to come from the liver. The liver was occasionally the seat of this inflammation, not only in its inverting membrane, but the parenchyma; sometimes there were abscesses, and in one instance portions of it were gangrenous. The lymphatic glands were generally of a dark red color, frequently resembling clots of blood. This disease of the lymphatic glands was of common occurrence.

The lungs were frequently the seat of this inflammation, portions of one or both presenting different appearances from simple congestion to complete hepatization; sometimes there was ulceration, and frequently there was a turbid or sero-purulent, or bloody effusion into the pleural cavity; sometimes there were extensive adhesions between the lungs and pleura of the ribs. At first I was inclined to believe this malady to be a form of pleuro-pneumonia, but after I became better acquainted with it, I found that the inflammation was not uniformly confined to any organ. In a number of instances the mucous membrane of the bronchia was deeply ininflamed, and the inflammation extended to the trachea and larynx. In several instances the larynx was inflamed, resembling laryngitis. One animal that had great difficulty in breathing, and could make no noise, I had knocked in the head, and on examination, I found the mucous membrane of the larynx and epiglottis inflamed and swollen; also the tongue was swollen. There were evidences in several instances of pericarditis, which had produced adhesions between the heart and pericardium. The brain, from the difficulty of opening the skull, was examined only in one instance; it was found healthy, although I feel confident it was frequently the seat of the disease.

From these examinations we see that it is a misnomer to call this malady cholera. It is a contagious inflammatory disease, the inflammation being confined to no particular tissue, sometimes attacking only one, at others, several in the same animal. Evidences of this inflammation were found in the dermoid, the cellular, the serous, the mucous, and glandular tissues. I consider it a diffusive form of inflammation from the manner in which I have witnessed it spread along the skin. In one night I have seen it extend from the eye to the ear—the ear becoming inflamed and swollen. Although we have not been able to show that this is a cholera epizootic, still the facts elicited may be of interest, and remove doubts at some future period. But, then, if this malady does not resemble cholera, does it resemble any of the diseases to which the human system is subject? I think not. Like the specific eruptive diseases, it is highly contagious; the infection has a period of incubation of from twelve to twenty days, and one attack appears to exempt the animal from a second. But in this disease, although petechia and an eruption may appear on the skin, its principal characteristic is a diffusive form of inflammation, which may attack nearly every tissue and spread like an erysipelas. But then, again, it differs from this disease, as it is well known that in erysipelas one attack does not exempt the system from a second; and although erysipelas may be contagious, still it is doubtful whether the period before the eruption shows itself is so uniform as in this disease; and while erysipelas is generally confined to the skin, this inflammation most frequently attacks the lungs and mucous membrane of the alimentary canal. This disease appears to be intermediate between the specific eruptive diseases and erysipelas—partaking of the nature of each, and probably not having its exact resemblance among the diseases to which the human system is subject.

This epizootic has probably been the most extensive that ever appeared in our country. The question is continually suggested what causes have predisposed the swine to this disease. Has it spread from that epidemic influence which has recently favored the extension of cholera over the globe? or have the remarkable seasons which we have had within the last three years, given rise to, and favored the spread of this malady? Since 1855 we have had unusual fluctuations in the temperature, and humidity of the atmosphere; such fluctuations as some authors would consider as belonging to pestilential periods. We understand how, in the *regular* order of nature, the revolution of the earth, and unequal temperature at different latitudes produced by the sun, give rise to great aërial currents; the prevailing winds, and the great storms which deposit moisture, absorbed by the atmosphere from the Southern Ocean and Gulf, over large portions of our continent. But I am not aware that any successful attempt has yet been made to account for these extreme fluctuations in temperature and humidity; fluctuations which have been observed in all ages and nearly all countries, producing in ancient times the famine, and supposed to be intimately connected with the causes which spread pestilence over the world. A brief notice of these extremes in seasons in this country, as a possible cause of this epizootic, and their effects upon human health, may not be out of place. The winter of 1855–6, as is well known, was intensely cold. The Ohio River was frozen over, and during the month of January loaded wagons were crossing and recrossing daily on the ice. This cold winter was followed by an unusual drouth, which commenced early in the spring, and continued through the summer; some of the crops were almost a complete failure; thousands of acres of grass and small grain in this section of country were not even harvested; the springs throughout the country became dry; the river receded to its lowest mark; navigation was almost entirely suspended, and the river closed again in the winter of 1856–7, which was also remarkably cold. The following spring was at least a month later in this latitude than usual, and frost and snow appeared in the Southern States as late as April. I have seen it stated that such an event had not been known before for fifty years. The last summer has been unusually propitious; the temperature has been mild, with an abundance of rain; vegetation has been luxuriant; the crops of all kinds have been unusually large; and, although the corn-rot has been extensive, there probably never was a greater abundance of agricultural products in the country than at present. The winter of 1857–8 has been as remarkably mild, up to February 10th, as the other two winters had been unusually severe. On the 20th of January the maples were out in blossom, many of the flowers were up, the robins and other spring birds were here in abundance, and the temperature more resembled April than January. During these remarkable seasons, the country, since the fall of 1855, has been unusually healthy. No fatal epidemic has prevailed; neither the cold winters, or the extreme drouth of 1856, or the wet and fruitful summer of 1857, or the present mild winter, has produced any extensive disease among the human race. Those who consider that "extremes of temperature, whether high or low, are eminently destructive to life," will find it difficult, I think, if we except the epizootic among the swine, to reconcile their conclusions with the remarkably healthy seasons which have recently occurred in connection with the extremes of temperature. Scarlatina and measles prevailed in the neighborhood of Aurora in the spring of 1857, and measles were more prevalent than they had been for many years. Still, *these epidemics were local*, and the cases so mild that few required medical treatment. The mild form which measles assumed may have caused, to some extent, their general prevalence; as parents were induced, from this mildness, in many instances to expose their children to the disease. Are we, then, to consider this epizootic as arising from these extremes of temperature, or humidity of the atmosphere? If so, why should it prevail with equal fatality in very opposite seasons—prevailing in the dry summer of 1856, also in the cold winter that followed, and also prevailing in the wet summer of 1857? Are we to consider it connected with the causes which produce epidemics? If so, why has the human race been so unusually free from disease? If there had been an epidemic influence during the last two years, would we not have seen more or less of its effects upon the community, and why were not the swine attacked when epidemics were prevailing in the country? Have not the conclusions been too hastily adopted that regard the epidemic influence as extending over all organized bodies, or even over the inferior animals? That the vital force extending through all living bodies is in a continual perturbation, arising from changes incessantly taking place in physical nature, there can be no doubt. The storms and calms, the low or elevated temperature of certain years, the dry or humid atmosphere, are constantly modifying the conditions of living bodies, but with widely different effects. An elevated temperature and humid atmosphere, which gives rise to deadly miasms, spreads disease among the human race, favors the luxuriant growth of the vegetable world, and gives increased power and activity to not only insect life, but to many of the inferior animals. The causes which favor disease in one species of animals seem to give fresh life and vigor to another; as the carrion on which one species would fatten, would be to another poison. Whether the epidemic influence extends over all living bodies, and depends upon some unknown magnetic or electrical condition of our globe, or whether it arises from meteorological changes, or causes beyond, which bring about these changes, will be subjects of conjecture until phenomena are more extensively and carefully observed. We have seen that this epizootic has prevailed extensively, and spread over the country similar to an epidemic; and would not the theories which have been advanced to account for the cause and spread of epidemics equally apply to the cause and extension of this disease, whether we regard it as fungi, animalculi, electrical, atmospheric, a deficiency of ozone, or produced from an influence of the heavenly bodies? Does not the spread of this epizootic have rather a tendency to show the fallacy of some of these theories, and does it not also show that it is highly probable that as we become more thoroughly acquainted with these wide-spread diseases among inferior animals, we may find that they are confined only to species, and that they arise from causes as distinct from those which produce a human pestilence, (although they may occur simultaneously,) as the potato-rot does from those which produce the yellow fever?

Another question connected with this subject, and one of much interest, is in the possibility of diseased meat finding its way into market, and whether its consumption would produce injurious effects upon human health. The rapid manner in which this malady spreads through a drove of hogs, the large numbers that die, and the severe losses which have been sustained from this disease, are now strong inducements for persons inclined to act dishonestly, to either butcher or dispose of their hogs as soon as this disease makes its appearance among them. The fifty hogs already alluded to, that were disposed of by one of our farmers, is an instance. This farmer acted honestly, however; he sold them at a reduced price as diseased hogs; but if the butchers to whom he sold them had not been honest men, this meat would probably have been sold in market. The *Baltimore American* says the mayor, accompanied by a deputy marshal, visited a distillery, "and there saw a considerable number of men all busily engaged in cleaning hogs, and preparing them for the parties that had already bargained for the two furniture wagon loads which were captured on the previous night by the police of the southern district. They counted no less than forty-one hogs, many of which bore unmistakeable evidences of death either from violence or disease. The bodies were highly discolored, and the smell arising therefrom was of the most offensive nature. It was the intention of the authorities to have arrested all the parties, but they fled ere they could be taken. Yesterday an officer, acting with the authority of the Board of Health, confiscated all the hogs, and will take such measures hereafter as will prevent such traffic, at least in that quarter. There is a very general feeling in existence in relation to the whole affair, and memorials are now in circulation asking for the appointment by the councils of regular meat inspectors for the city markets. It is stated that upward of *six thousand diseased hogs have already been* DISPOSED *of in this city*, by certain parties. Such transactions will have a tendency to increase the business of the respectable victuallers, for persons will rarely, with any degree of security, purchase of any others." The *N. Y. Post* says: "The hog cholera is creating an excitement not only out West, but in the Eastern States. At Brighton, on Monday last, the alarm was so great, that 2500 hogs offered for sale, met with no buyers at any price. In Greenbush, we understand that the sick hogs arriving from Illinois and Ohio amount to one hundred and fifty a day. A large number of them are *slaughtered* in the village, and sent to New York and Boston." I have also seen notices in the public papers in this State, of persons supposed to have been made sick by eating this diseased meat. Independent of the disgust arising from the idea of eating flesh of diseased animals, what effect would this meat have on health? The following facts may probably be of some interest on this subject. A dog belonging to Mr. Wm. Rickets, of Aurora, was chained near the pens at the distillery, and fed on diseased meat; he continued healthy and grew fat, until the sixth week, when he became unwell, vomited frequently a greenish looking mucus, and died on the third day from the time he first showed symptoms of disease. Two more dogs, both belonging to Mr. Woulf Denderline, of Aurora, were also chained near the pens, and fed on diseased meat. One continued healthy until the fifth week, when he became unwell, refused to eat, vomited also a greenish fluid, had diarrhœa, and died on the sixth day from the time he was taken unwell. The other dog continued well until the fourth week, when he was attacked with vomiting; no diarrhœa was observed, and, on the third day after, he died. Two more dogs, belonging to Mr. John Buffington, were chained at the pens, and fed on diseased meat. One of them died in the third week, with similar symptoms to the first mentioned. The other became unwell on the fourth week. The owner thinking that he was going to die, had him removed, and fed on different food. He gradually recovered, though it was with difficulty that he could walk for more than a month afterwards. I saw him three weeks after he had been removed from the pens. On making him get up, he would stand with his head down, his body drawn up, his back arched, and in attempting to walk, would put one foot an inch or so beyond the other. One of the men who attends the hogs informs me that for sixteen years he had been engaged in this business, and always kept a dog chained near the pens, which was fed on the flesh of the hogs that died, and that this food never before injured his dogs. At first I was inclined to believe that the consumption of this meat would not be directly injurious, but from the effects which we have witnessed upon these dogs, it appears highly probable that, used as an article of food, this meat may gradually produce in the human system diseases the source of which would scarcely be suspected. When we consider the large amount of pork that is consumed in our country, this question becomes one of deep interest; and although the facts which I have presented may not be conclusive as to the poisonous character of this meat, still they show, at least, that this subject is worthy the attention of physicians, and a more careful investigation than it has received from me. I may mention here, that while making my examinations (although careful not to have any hogs opened except those that had died with well-marked symptoms of this epizootic) I frequently found chronic diseases which appeared to be of long standing. Sometimes there were an immense number of tubercles in the lungs, also occasionally in the liver. In some instances there were abscesses in the liver, also in the mesentery, filled with yellow pus. Sometimes there were worms in the intestines, also in the kidneys, and diseases sufficient to show that, besides the filthy habits of the swine, the Jew and the Turk have reasons for regarding the flesh of this animal as unclean.

From the very infectious character of this epizootic, the question may be asked, could this disease be communicated to the human system? Copland, in his *Medical Dictionary*, page 882, says: "Epidemics often commence among the lower animals, especially horned cattle and sheep, and the use of the diseased flesh may occasion malignant diseases among the human species. Whether or not infection may be conveyed from these animals, while alive, to man, during epizootic, has not been fully ascertained. That it can be thus conveyed in respect to some maladies, has been proved in modern times." We have no evidence that this disease among the swine can be communicated to the human system. The men who attend these animals at distilleries, have spent nearly their whole time, for months together, surrounded by hundreds of diseased hogs, and yet, among these men at all the distilleries I can hear from, there has been no unusual sickness. Also the soap-boilers and their assistants, who are constantly handling the diseased hogs, and breathing the effluvia arising from their putrefying bodies, often intolerably offensive, do not appear to have been affected. While examining the diseased hogs, I several times wounded myself; but the wounds readily healed, and there was no unusual inflammation. This disease seems to be peculiar to the swine, and it is extremely doubtful whether, under any circumstances, it can be communicated to the human system.

Those who feel an interest in this epizootic, may find a more full account of it in the forthcoming volume of the *Transactions of the Indiana State Agricultural Society.*

ART. III.—*Practical Miscellanies, being cases observed at St. Anne's Hospital for Children in Vienna.* By L. W. MAUTHNER, M.D., Professor of the Diseases of Children in the University of Vienna.*

I. *Nitrate of Silver in Serous Diarrhœa.*—Catarrhal diarrhœa was almost an epidemic disease during last autumn among the children who were admitted into this Institution. With those who were suddenly weaned, it would sometimes assume the character of cholera infantum. In the graver forms of this malady, I have prescribed crystallized nitrate of silver since 1839. To new-born infants and sucklings I give $\frac{1}{4}$ grain daily, in solution, kept in a bottle of dark glass, and administered with an ivory spoon. The remedy has always succeeded in arresting the diarrhœa without any evil consequences. The colorless stools assume a light-green hue after the second or third dose, and contain remnants of the milk taken into the stomach. As soon as the light-green stools make their appearance, I discontinue the use of the remedy. If an appropriate nourishment can now be procured for the child, especially the breast of a healthy nurse, it may be considered safe.

Thousands of experiments have confirmed me in the beneficial effects of this medicine, even in the Asiatic cholera of children, in which it also arrests the diarrhœa, given, however, in larger doses. I have convinced myself that children can take two grains of nitrate of silver daily, in this terrible disease, without any injurious effects. In most cases of Asiatic cholera it has been administered in form of clysters, in a solution of three to four grains to two ounces of water, applied every two hours.

For the cure of purulent ophthalmia of new-born infants, Professor Yaeger, Sr., has applied the nitrate of silver ever since 1837. From the highly gratifying results in that disease, I was induced to avail myself of it in my practice. It is now nineteen years since I observed its use, and would recommend it as an efficacious therapeutic remedy, in the diseases of children. The diarrhœa which occurs during dentition, and the much prevailing summer-complaint of America, which proves so often fatal, has been frequently cured by the administration of this remedy.

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* In a letter to the Senior Editor.

II. *Use of Ass's Milk in Atrophy of the Bones.*—On the 20th of October, soon after my arrival in Vienna from a tour through the United States, I was called to a distant part of the city to a child six months of age, who, with the exception of the head and abdomen, presented nothing but four thin staves, in the shape of extremities; a high degree of marasmus, which had been treated for four months for diarrhœa, by another physician, with extractum ligni campechiensis. I advised the abandonment of everything else, and let the child have nothing but ass's fresh milk. At the expiration of a month, the child was brought to me perfectly well and robust-looking. Next to the mother's milk, I know of nothing which acts so charmingly as the milk of the ass.

III. *Spontaneous Fractures in the graver degrees of Rachites.*—Rachites is a disease of frequent occurrence among children in this region, and often appears in the first month of infant life, in the cranium, ribs, and extremities. It seems, in most instances, to be an independent disease, originating from dynamic causes. Neither can the pressure of the brain on the occiput, nor the compression of the thorax by the atmosphere, nor, least of all, can the weight of the trunk upon the lower extremities, produce the rachitic condition.

I have often observed rachitic distortion of the extremities at an age before any attempts were made to put the legs of the children in a standing position. If such a bone is sawed through, it will immediately be perceived that the locality of the rachitic bend has its medullary canal obliterated, while an areolar tissue grows in the atrophied substance of the bone, which impedes its nutrition. In such cases it has happened that by the influence of muscles and their clonic spasms, the bone seems to be broken in these places. I have observed such fractures on several extremities, where no trace of any external violence could be discovered.

ART. IV.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, Jan. 27th, 1858.

The President, DR. GROSS, in the chair.

Cyst Expectorated from the Lung.—DR. STILLÉ exhibited a cyst about three-fourths of an inch in length, pyriform in shape, and containing a fluid of a yellowish-red color. It was expectorated, not long before death, by a patient of Dr. Gilbert, a man whose main symptoms were great emaciation and cough, and who presented the physical signs of dulness on percussion, and a feeble respiratory murmur on the right side, at the apex of which gurgling also existed. Tubercle was thought to be present, but no post-mortem examination could be obtained, so as to permit the exact condition of the lungs to be stated.

DR. RICHARDSON had seen the cyst shortly after it was coughed up; it was then flat, and not filled with fluid. He considered it an acephalocyst.

Softening of the Gray Matter of the Cerebral Convolutions in a Child thirteen years of age.—DR. MITCHELL exhibited a specimen of chronic inflammation and softening of the gray matter of the cerebral convolutions in a child thirteen years of age. The subject from whom this specimen was taken was one of fifteen children, born within a period of sixteen years—the mother having twice had twins.

J. D., when five years of age, was a handsome, intelligent child. At this time he began to see dimly, and at last became entirely blind, from what was believed to be amaurosis. When nearly blind, he began to show a loss of power to fix his attention, and at length, within six years, became completely idiotic. One year ago he was attacked with epileptic fits, which succeeded one another at less and less intervals, until they destroyed his life. Paralysis of the left side, and violent convulsions of the right side, preceded his dissolution. During his idiocy he retained the power of singing, and sang several songs very well, even a few days before he died. He also retained the ability to learn new music, although he mumbled the accompanying words, and evidently attached to them no definite meaning. All other mental effort seemed impossible. His temper was peevish and sullen, and a more pitiable object can scarcely be conceived of.

On post-mortem dissection the following appearances were observed:—Head well developed; body and limbs thin; large ulcer (bed sore) on the sacrum. On opening the head, adhesions existed along the line of the great longitudinal sinus, closely glueing the membranes together; the deposits were of comparatively recent origin. A large amount of serum was found within the membranes, and the brain, compressed and shrunken, did not fill the cranium. With this exception, the upper surface of the organ was healthy, although the membranes were more than usually vascular. Below the middle line of the brain, and principally in the middle and posterior cerebral lobes, were many spots where the surface was a little flattened. On cutting into these, the knife passed through a layer of gray cerebral matter which adhered to the membranes, and then entered a cavity whose walls were ill defined. This cavity was thus bounded on all sides by gray matter, and followed the irregular curves of the convolutions. It contained altered blood discs, brain cells, fragments of nerve tubercles, nuclei, compound granular masses, cholesterin plates, and quantities of granular matter, with occasional fragments of pigment. On careful inspection, the external gray matter of the cerebral convolutions offered, nearly everywhere, some stage of the process whose completed results we have just described. The first stage seemed to be a red line of inflammation just within the external limits of the vesicular neurine. In the later periods of change, this appearance was lost in the complete destruction of tissue which followed. No cause was seen to account for the early amaurosis, and an examination of the retina was denied. The child died, therefore, from chronic peripheral encephalitis with extensive serous effusion.

Ossification of Arteries in a case of Dry Gangrene.—DR. MORTON exhibited a specimen of partial ossification of the aorta, right iliac, femoral, and complete obstruction of anterior tibial artery, taken from a patient who died in the Pennsylvania Hospital, of dry gangrene of foot; the disease ran its course in about three months; the vessels of the left side were perfectly healthy.

Strangulated Hernia.—DR. MORTON also exhibited a specimen of strangulated hernia, and read the following history of the case:—George Hirst, aged twenty-six, married, was admitted into the Pennsylvania Hospital on January 22, 1858, with symptoms of strangulated hernia. He stated that he had been quite well until the Wednesday previous, when riding on horseback he felt sharp pains in his abdomen; he soon returned home, and after taking laudanum went to bed. The pains continued, and were soon followed by vomiting, which continued all Wednesday; on Thursday he was the same, but with cramps more violent; he then sent for a physician, who did not arrive until Friday morning, when he examined him, and advised his being brought to the hospital, where he arrived about 2 o'clock P.M. On examining the patient I found great tenderness of the abdomen, and a large scrotal hernia on the right side, which was very painful when touched; he stated that his right testicle had always been larger than the left, and that his bowels had not been opened for six days, with the exception of a small passage on Thursday morning. He was placed in a bath, temperature 110°, and an attempt at reduction was made, but failed. Another attempt soon after succeeded better; for the tumor disappeared under the taxis, and seemed to be entirely reduced with the exception of a swelling about the size of an egg, which was no more than a collection of fluid in the sac; since by placing the fingers rather lightly just above the swelling, the fluid could be pressed into the superior portion of the sac. The finger passed up could now feel distinctly the edges of the internal ring; the patient, feeling himself much relieved, was carried into bed, and an injection given. This soon came away, followed shortly afterward by an evacuation of at least a quart and a half of dark-colored fæces. He now felt so much relieved that he fell asleep, and had but occasional vomiting until 10 o'clock P.M., when it again become more frequent.

DR. PEACE saw him at 7 o'clock, P.M., and ordered him a dose of oil, which he vomited, and warm fomentations on the belly; he considered him in a favorable condition, and did not think there was any gut in the ring, but left directions that if symptoms of strangulation became marked, to call a consultation of the surgeons of the Institution early in the morning. At 6 o'clock A.M., the next day, the patient commenced vomiting much more frequently, and soon fecal matter was thrown off; he was soon seen by the surgeon of the house, who, not feeling any obstruction in the ring, thought that the symptoms were caused by an aggravation of the inflammation, or by an internal stricture. At 10 o'clock A. M., the man's skin was cold; belly somewhat tympanitic and tender; scrotum had diminished in size since yesterday. An operation was not thought advisable. He continued to vomit the same way all Saturday, gradually becoming weaker; had voided only about 4℥ of urine since his admission; on Sunday he was delirious; died at 1 o'clock P.M.

Post-mortem Examination.—The intestines were found much inflamed and dark colored, with patches of effused blood here and there, but no lymph, nor any effusion in cavity. On opening the scrotum about two ounces of a thick fluid escaped, of a dark color. The scrotal sac was very large, and seemed as if it had been distended; on running the finger up the cord, a knuckel of intestine was unexpectedly discovered at the internal ring; the intestine was perfectly empty, and quite flabby, and the finger could also be passed around the edges of the ring: the intestine sliding under, and before the finger, gave the impression that no gut existed there; the protuding portion was a piece of the ileum, not far from the cæcum; one side of the gut was attached by bands to the edge of the ring, while the other was quite free, and could be drawn within and without the ring. The probability is that it was an old congenital hernia, capable of partial reduction. The hernia, which was scrotal at the time of his admission, was reduced, with the exception of the small attached portion at the internal ring, which probably had always remained outside, without giving any trouble. The alleviation of his symptoms for the time, and the free evacuation, would be still accounted for; the inflammation continuing, the strangulation finally became more marked.

Aneurism of Arch of the Aorta.—DR. GROSS exhibited a specimen of aneurism of the arch of the aorta. The patient, a man aged thirty-seven, had always been in ill health, yet the disease appeared to be only of six months' duration, as far as it had attracted attention. Latterly the marked symptoms were great prominence of the upper portion of the chest; a pulsating tumor; immense difficulty in breathing; an anxious countenance; and great emaciation. About six weeks before death an abscess pointed near the median line, and in three days after it burst and discharged sanious matter; but the immediate cause of death was the opening of the tumor into the pleural cavity.

Autopsy.—The right lung was adherent to the tumor and hepatized; the pleura was thickened, and contained at least a quart and a pint of coagulated blood; the pericardium was adherent to the heart; left lung adherent, and some effusion in left pleural cavity; there was extensive degeneration of the tunics of the tumor; valves of the heart were normal; the orifice of aorta somewhat dilated. The aneurismal pouch was one and a half inches above valves, and contained fibrinous concretions partially organized. The sternum at one place was absorbed, and several ribs had given way; the arteries at the root seemed healthy; innominate artery somewhat dilated; the trachea was not compressed.

DR. HEWSON had seen a case of aneurism of aorta which terminated favorably. The tumor, which could be perceived to pulsate across a room, had eaten its way through the sternum; an abscess, which resulted from caries of the sternum, opened, bone was discharged, and the aneurismal tumor then gradually disappeared. He saw the man two years afterwards, and he was quite well. The case was probably familiar to the members of the Society.

Erectile Tumor from the Orifice of the Urethra.—DR. PACKARD exhibited a microscopical drawing of a portion of a tumor, removed by him from the orifice of the urethra. The patient, a married woman, aged fifty-two, mother of eleven children, the youngest being now eleven years old, has had hysterical symptoms, headache, debility, &c., for two years, with great pain in urinating. On an examination of the external genital organs, a very florid growth about the size of a lima bean, compressed laterally, and finely lobulated, was found springing from the opening of the urethra, within which its pedicle was attached. It was extremely sensitive, very soft and compressible, but the mucous membrane covering it was tough, so as not to be torn when the tumor was seized with forceps. A ligature was applied to the pedicle, with the effect of cutting directly through it; free bleeding ensued, which was, however, soon checked by dry lint. After soaking in water for hours, the tumor became blanched, and its lobuli less apparent. Examined by reflected light, with a magnifying power of forty diam., it showed an arterial twig ramifying near the surface. In making a section of it, the slice obtained broke down by pressure on the thin glass cover, and the following elements were observed with a power of 360 diameters:—

1. A few squamous epithelial cells.
2. A great many caudate, elongated, granular cells, with large nuclei, sometimes two in one cell, and one or two nucleoli in each nucleus.
3. A great many cells, like those represented by Vogel as seen in "recurring fibroid" tumors.
4. Several wavy masses, somewhat like involuntary muscular fibres, apparently composed of bundles of longitudinal fibrillæ, with here and there a very faint semblance of a nucleus; little change induced by acetic acid.

Dr. S. W. Mitchell, who had examined a portion of the tumor, saw the same elements, also a few nerve tubules. These growths are interesting, from the fact of their frequent occurrence and excessive sensibility, neither of which are accounted for by authors. In the present case there seemed to be no reason to suspect any gonorrhœal or syphilitic affection.

As to their nature, Vogel and Gross place them among the erectile tumors; Rokitansky calls them fibroid, describes them as formed of lax cellular tissue, derived from submucous, and evidently ranks them among polypous formations. The analogy of some cells in this tumor to the confessedly malignant "recurring fibroid," with the known tendency of these sensitive tumors to reappear, together with their alliance with polypus tumors of the nose and antrum, which so often assume a malignant character, would seem, perhaps, to establish something like a chain between simple and malignant growths.

Dr. Darrach examined two erectile tumors some time since, and could find no nerve fibres, although they were exceedingly sensitive.

Dr. Woodward remarked, in relation to the drawings of the cells of Dr. Packard's case, that the cells resembled those seen in new forming connective tissue. They look like the cells about to multiply by division, seen in new growths of the connective tissue.

Aneurism of the Innominata.—DR. HUMPHREYS submitted the following:—John Sweeny, aged thirty-eight, was admitted into the Pennsylvania Hospital Nov. 24th, complaining of a cough which had lasted three or four months, accompanied by a puruloid sputum. He was rapidly losing flesh; suffered from hectic; had occasional attacks of dyspnœa, together with other rational signs of phthisis. The physical signs were not so satisfactory. There was no marked dulness upon percussion anywhere. The respiration was exceedingly roughened throughout the chest, and at the apex of the right lung, bronchial and almost cavernous. The pulse was about natural on the left side, but was wanting on the right. The patient was placed upon the usual treatment for phthisis. About Dec. 20th he began to complain of increasing difficulty in respiration. On the evening of the 23d the dyspnœa increased alarmingly, and about 12 P.M. the patient died suddenly, while sitting upon the close stool.

Autopsy.—The lungs were sparsely scattered with tubercles, a few of which were softened. The bronchi, trachea, and larynx were completely filled with pus, which, during the removal of the lung, was also ejected from the mouth. The heart seemed natural, as did also the aorta, but at the junction of the innominata an aneurism, of about the size of a goose egg, arose, involving the whole of that artery. The whole of the aneurismal sac was filled by dense concentric layers of clot, so as completely to obstruct the flow of blood into the axillary and carotid arteries of the right side. Posteriorly the sac was adherent to the trachea, and at this point, between the trachea and the solidified aneurism, the remains of an abscess were found, capable of holding some two or three ounces of pus, and which had discharged itself through a small opening in the anterior wall of the trachea, thus filling this and the bronchi with pus, and producing suffocation and death. There had been no hæmoptysis, nor any discharge of blood whatever, so that the death of the patient must be entirely attributed to the suffocation produced by the effusion of pus into the air passages, and not directly to the aneurism, as at first might have been supposed.

Calcareous Deposits in Pleura.—DR. DARRACH presented a specimen of calcareous deposits in subserous tissue of the pulmonary pleura at the apices of both lungs, with history attached.

DR. DARRACH also exhibited a pneumonic lung:—Mrs. ——, aged thirty-three years, sick ten days, got out of bed some time after retiring, and went down stairs; when she returned to bed she was seized with a chill, and afterwards had great pain in the side, with cough. This occurred on Friday, Jan. 15th. I saw her, for the first time, on Saturday, Jan. 23d.

Symptoms.—Anxious expression of face, purplish lips, panting respiration—44 in a minute; pulse almost imperceptible, intermitting, irregular, and very frequent; excessive pain in the right side.

Physical signs.—Flatness anteriorly on the right side, blowing respiration, prolonged expiration under clavicle; posteriorly very dull, voice hard, no aegophony, no blowing respiration. Left side very resonant, purile respiration, slight mucous rale posteriorly low down.

Treatment.—Antimony, calomel, blister.

Jan. 24th. Breathing freer, pain greatly relieved, pulse unembarrassed—160 beats to the minute, feels stronger. There was not much change after this, excepting that the percussion became clearer, the respiratory murmur increased, and the blowing respiration ceased over the middle anterior region on the right side. The left side remained clear up to my visit on Tuesday, Jan. 26th, with exception of slight dullness very low down posteriorly; hands clammy, anxious. Died at 2½ A.M. on the 27th.

Sectio cadaveris.—Effusion into both sides of chest and into pericardium; left lung had no adhesions, congested, shriveled-looking, probably from compression of the fluid. Right lung adherent anteriorly by a thick yellowish false membrane, slight adhesions laterally and posteriorly, gray hepatization of most of the upper lobe anteriorly; posteriorly the whole lung was very much congested, lower part anteriorly œdematous.

Microscopical examination of the gray hepatization.—Fibrous tissue of lung appeared healthy; the field of the microscope was covered with cells filled with oil, consisting, likely, of both lymph corpuscles and lung cells.

WEDNESDAY EVENING, Feb. 10th, 1858.

The President, DR. GROSS, in the chair.

Cancer of the Great Omentum, of the Smaller Curvature of the Stomach and of the Pylorus.—DR. DARRACH exhibited a cancer of the great omentum, cancer of the smaller curvature of the stomach and of the pylorus, atrophy of the gall bladder, fatty liver, oily degeneration of muscular tissue of the heart, atheromatous deposits in aorta, on mitral valves, and in splenic artery, peritoneal hypertrophy of the uterus, yellow nodules on ovaries, (probably cancerous,) all obtained from the same patient, a Mrs. ——, aged sixty-six years, born in England, a widow. She was a woman of ruddy complexion, a good liver, indulged in malt liquors; she was of full habit, had been in ill-health for a number of months, and came under the care of Dr. Beesley eight days before death. The symptoms then were frequent vomiting of all she swallowed, (never retaining food for more than three hours, and frequently only for one hour;) pain in region of stomach, which subsided under treatment; abdomen was not tender to touch; laid straight in bed, no evidence of tumour or internal hardening; walked about until three days before her death; insensible for the last twenty-four hours of her life; still vomiting, lost all strength, great nausea, burning pain in stomach, thirst. The treatment consisted in tinct. aconiti, rad. gtt. ij, which relieved the pain, given four times daily; bowels were not opened for eight days previous to death.

Sectio cadaveris.—General appearances: skin clear, ruddy-looking, no rigor mortis. Thorax—heart flabby, fat concealing muscular structure of right ventricle; aorta and pulmonary artery somewhat dilated; muscular tissue of left ventricle pale; slight atheromatous deposits in aorta and on mitral valves. Lungs extremely congested, posteriorly and inferiorly, especially the left, (looked like apoplexy.) Abdomen—peritoneum, over bowels and abdominal walls, much injected; no effusion of lymph Stomach enlarged, a few tubercular-looking deposits along the greater curvature, near the pyloric end, and on the peritoneal coat; lesser curvature puckered up, and closely and firmly attached to under-surface of the liver at the transverse fissure and the fissure for the gall bladder; cancerous deposit at the lesser curvature, near the cardiac end of stomach, and also at pylorus, the latter causing stricture of that orifice; the little finger could just pass through. The deposit at the pylorus was at the upper part, the situation of both deposits being between the muscular and mucous coats; the muscular coat was much thickened, the mucous coat moderately rugous, and covered with small points of ecchymosis. Great omentum was contracted and thickened from its attachment to transverse colon downward; edges thick and rounded; surface covered with nodular tumors, from the size of a pin's head to a small cherry, and of a yellow color; veins of omentum much congested and contorted; fine capillary congestion between the yellow nodules, giving it a very beautiful appearance. Liver; brownish-yellow color—gall bladder about the size of the little finger, with a cavity which would scarcely admit a crow-quill; this atrophy of the gall bladder no doubt was produced by compression, caused by the lymph which was deposited between the liver and stomach, and bound the stomach closely and firmly to its lower surface. Spleen healthy, arteries atheromatous. Kidneys large, pale; supra renal capsules large, softer than normal. Bowels dark-looking, mucous membrane much congested. Mesenteric glands unaffected, as far as examined. Uterus hypertrophied; cavity of cervix filled with a tenacious gelatinous substance; follicles much enlarged, and filled with the same glairy substance. Ovaries full size; each had a small nodule of yellow matter on its surface, of a cancerous nature. Veins of all the organs were filled to a marked degree with black fluid blood; so was the right side of the heart.

A microscopical examination of the deposit in the omentum and stomach exhibited marked cancer cells.

DR. LEVICK inquired whether the splenic artery was not particularly liable to deposits in, and degenerations of its coats. He had seen the splenic and brachial, and the splenic artery and aorta, diseased in cases, in which the other arteries in the body had been perfectly healthy.

Dr. Gross remarked that the splenic artery is more frequently ossified than any other visceral artery. The hepatic and spermatic arteries are seldom or never thus affected.

Encephaloid of the Right Testicle.—Dr. Darrach also exhibited an encephaloid cancer of the right testicle, removed from "Mr. ——, aged thirty-five years, single, a farmer, strong, muscular, free from the most remote hereditary taint, of perfectly regular life and habits. To his certain knowledge there has not been cancer in the family for five generations; has noticed, as long as eight years ago, that the right testicle was larger and harder than the left; it has slowly and steadily grown; was painless even on pressure, till within the last few months, when it has had at times a dull aching pain in it, and a feeling of dragging, though a supporter had been worn. From the first the testicle has been equally enlarged, though perhaps the body was rather in advance of the epididymus; surface has been regular, not tuberculated, firm, and latterly almost long in feel over the upper part of the epididymus. Within a few months, a spot on the upper and anterior part of the tumor fluctuated. The cord had always been somewhat enlarged, but was apparently perfectly healthy. On cutting down to it, some fluid escaped from a small unobliterated portion of the tunica vaginalis sac, (which had caused the fluctuation,) leaving the tumor solid." The testicle or tumor was oval, flattened somewhat from side to side, did not cry under the knife; the cut surface marked by fibrous-looking bands, studded with yellow substance, and when cut deeply into, the section presented is of a mottled-red, white, and yellow color. On microscopical examination no trace of the seminal tubes could be found. By pressure, an abundant creamy juice could be obtained, which consisted almost entirely of large characteristic cancer cells. The yellow matter was mostly composed of large cancer nuclei, and cells undergoing oily degeneration, with crystals of cholesterin.

Enlarged Liver and Spleen.—Dr. Stillé exhibited an enlarged spleen and part of a liver, obtained from a post-mortem examination at which he was present. The person, he was informed, a man fifty years of age, and of intemperate habits, was attacked with abdominal pain some months ago, which was followed by dropsical effusion in the extremities and abdomen. Percussion showed the spleen to be enlarged. The urine did not contain albumen, but it was stated by the patient that some time previous to his last illness he had been treated by a physician for diabetes, and recovered. He had never suffered from intermittent fever. The impulse of the heart was augmented. The dropsy increased, and the patient gradually sank.

Post-mortem examination.—The feet and legs were enormously distended. Three gallons of fluid were found in the abdominal cavity. The *liver* was enlarged, and cirrhosed on its under surface. The *spleen* was large and firm; its capsule was dense and opaque, and on it were two white spots the size of a dollar, and of cartilaginous consistence. The *heart* was in a state of dilated hypertrophy; its walls fatty; its valves healthy. One kidney was perfectly healthy, the other was not examined.

DR. FISHER commented on the fact of the diabetes having disappeared. He had observed a case in which the patient had suffered from diabetes, but entirely recovered, and which now exhibited, as in the case just presented, signs of hepatic disease.

DR. DARRACH believed that diabetes occurring at an advanced age, was frequently quite tractable to treatment; sometimes the sugar disappears from the urine to reappear. He spoke of a paper by Jones on the Intermitting Diabetes of the Aged. He had now a case under treatment, in which, for two weeks, no sugar had appeared in the urine.

DR. LEVICK remarked that the liver before them was interesting, in being a case of enlargement, with marked cirrhosis. Dr. L. had seen several cases of marked granular liver, accompanied by enlargement of the organ.

WEDNESDAY EVENING, Feb. 24th, 1858.

The President, DR. GROSS, in the chair.

Atheromatous Deposit in Arteries; Calcareous Deposit at Apex of the Lung; Degeneration of the Pancreas.—DR. R. P. HARRIS exhibited a specimen of atheroma of the aorta, disease of the pancreas, and calcareous deposit at the apex of the lung, taken from the body of Mr. K., aged fifty-two, of medium height, and sanguine temperament, who was attacked in July, 1857, with what he supposed to be dyspepsia, which was accompanied by nausea and occasional vomiting. He had no fever; did not lose much flesh, and had no symptoms indicatory of inflammatory action. After a sojourn of several weeks at the sea-shore without benefit, he returned to Philadelphia, and placed himself in the hands of his family physician, who subsequently called in the aid of one of his medical brethren in consultation.

At the time he applied for medical aid, he had, together with the nausea before mentioned, hurried respiration, pain in the region of the diaphragm, an inability to inflate the lungs without the production of a short, dry cough, attendant with pain in the epigastrium, an accelerated pulse, and a spasmodic cough. The sounds of the heart were natural, and pressure upon any part of the abdomen gave no immediate pain, unless force enough was used to create pressure upon the diaphragm.

As the disease progressed, the physical signs showed the existence of dropsy in the chest, but nothing special was detected at any time in the lungs themselves, which probably became affected subsequent to the effusion into the cavity of the pleura. The dyspeptic symptoms increased; vomiting became more frequent; effusion into the abdominal cavity occurred, and the legs became anasarcous. The urine, upon examination, was darker colored than natural, (sp. gr. 1012,) and yielded a considerable amount of albumen when boiled and subjected to the action of nitric acid.

Finally the state of the patient became more alarming, from occasional attacks of violent dyspnœa, vomiting, expectoration of bloody sputa, continued difficulty of breathing, drowsiness, prostration, &c. Death took place very gradually, the patient being moribund for two or three days. Respiration became more and more labored; no food was taken; cough ceased (ten days before death;) anasarca diminished slightly; and patient was very drowsy, though not comatose.

From the anasarca, albumen urea, vomiting, and epigastric pain, the disease before death was supposed to be granular kidneys, with perhaps cirrhosis of the liver.

Autopsy, Feb. 16th, thirty hours after death.—Cartilages of ribs ossified, except those of first and second. Pericardium contained about f℥ij. of brownish serum. Heart somewhat enlarged; coronary veins distended, but not ossified. Auricles healthy; secondary pouch in right auricle with very thin walls. Ventricles hypertrophied; left ventricle contained one columna cornea of very large size. Tricuspid valve healthy. Mitral valve slightly thickened with a small cyst upon the opposing surface of the right flap. Both sets of semilunar valves healthy; pulmonary artery the same. Aorta dilated and irregularly studded with atheromatous deposit; primitive, external, and internal iliacs the same. Right lung about half its natural size, strongly adherent to the diaphragm, of a blackish color, covered with deposits of greenish-black disorganized lymph. This lung was entirely hepatized. Left lung hepatized, except at the upper and anterior portion, where it was crepitant, and of a lighter color than the remainder. This lung was much larger than the left. At the upper surface, beneath the clavicle, there was a strong adhesion, in separating which a calcareous deposit was felt, and found upon examination to be imbedded in the substance of the lung, and to extend also into the adhesive band. Pleura contained a considerable amount of dark bloody serum. Liver healthy. Spleen small; marbled light and dark green; lobulated upon the surface; appeared healthy upon incision. Under the microscope, presented no very remarkable appearance; a preponderance of white corpuscles. Right kidney larger than the left; both somewhat congested; cones of the left more pointed than natural. Supra renal capsules healthy. Pancreas smaller than natural; dark colored; almost cartilaginous under the knife; presented fat globules under the microscope.

Enormous Fibro-Fatty Tumor of the Abdomen.—DR. GROSS exhibited a portion of a tumor removed, post-mortem, from the abdomen of a man about forty-six years of age. The weight of the entire mass was 74½ lbs. It had been gradually growing for five years, and did not prevent the patient—a superintendent of a foundry in the northern part of the State of New York—from attending to his business, until four weeks before death. The mass, microscopically examined by Dr. Leidy, to whom Dr. Gross was indebted for the specimen, was found to consist of adipose tissue, with fibrous tissue, yellow fibro-elastic tissue, and some bone.

Tubercle of the Kidney.—DR. GROSS exhibited a specimen sent to him by Dr. R. J. Levis, of tubercle of the kidney. The patient, Mrs. L., aged twenty-two years, had complained, since a recent pregnancy, of various symptoms not referable to any particular organ, such as debility, slight œdema, neuralgic pains, and nervous irritability. There was slight cough, with profuse mucous expectoration, and the patient finally died, exhausted by a diarrhœa, which attacked her occasionally a short time previous to her death. Her attending physicians, Drs. Jewell and Spencer, state that there had not at any time existed any symptoms of renal disease. The urine, although not minutely examined, presented at no time anything to lead to its particular investigation.

Autopsy.—Body much emaciated, without any œdematous appearance. Right lung tuberculous, with some softened tubercles, and one suppurating cavity. Left lung free from tubercular deposit, and healthy. Heart normal in appearance, but there were about five ounces of fluid in the pericardium. Liver healthy, without any tubercular deposit. Large intestine extensively studded with granular tubercles, and its mucous surface much ulcerated in small patches throughout its whole course. The right kidney was larger than usual, but free from tubercles, and generally healthy. The left kidney was enormously large, and abnormal in its position, being elevated and prominent toward the front of the abdomen. Within its cavity was about a pint of clear serous-looking fluid, without urinous color or odor, distending the pelvis and calices of the organ. The ureter was impervious near its cystic extremity. Masses of tubercular matter varying in size, one nearly an inch in diameter, were scattered through the kidney. The bladder was sound.

Fracture of Cervical Vertebræ.—DR. MORTON presented several fractured cervical vertebræ. The patient, a young man, aged nineteen, was admitted into the Pennsylvania Hospital in the month of January, 1858, for an injury to the head and neck, occasioned, as in a case previously shown, (see *Proceedings*, Nov. 25th, 1857,) by falling into the hold of a vessel and striking the back part of his head and neck. On admission he had symptoms of concussion, great pain in the back of neck, priapism, entire loss of sensation and motion from his arms down. His neck had the appearance of being dislocated; it seemed shortened, and the head thrown forward. His water was drawn from him for the first thirty-six hours, after which his fæces and urine passed from him involuntarily until his death, which took place on the tenth day. He remained perfectly conscious until a short time before his death.

On post-mortem examination, the bridge which connects the spinous and oblique processes of the fourth cervical vertebra was broken through; its body was also split. The bridge of the fifth was broken in the same way as the fourth, and its body split through and through. The right side of the vertebra was dislocated anteriorly, the oblique process had slipped forward and over that of the sixth. The body of the sixth was split entirely through and through. The spinal cord was pressed upon in several places, and large clots of blood could be drawn from the canal.

DR. HEWSON drew attention to the fact of the patient having lived nearly eleven days after the occurrence of the fracture. He had seen a patient who received an injury to the back, which caused the fracture of his fourth, fifth, and sixth dorsal vertebræ. This patient lived three months after the accident. There was an angular projection and displacement at the seat of fracture The fifth or sixth dorsal vertebræ were found to be pressed downward, obliterating the spinal canal. A bony growth had been thrown around the seat of fracture.

Suppuration and Enlargement of the Kidney.—DR. HALL called the attention of the Society to a specimen of abscess of the kidney.

The patient was a thin, ill-looking, anemic young woman, twenty years of age, a shop-girl by occupation. She was admitted, March 17, 1857, into the Pennsylvania Hospital, under the care of Dr. Pepper, for "vaginitis." She stated that she had been sick eight weeks with "pain in her privates," and a scalding when she made water. A fall from a chair was the cause assigned by her for the discharge and pain. The discharge from the vagina, with concomitant circumstances, was such as to warrant at least a *suspicion* of its specific origin. The girl herself, who was single, was either by nature exceedingly slow of intellect, or else by design kept to herself any information that she might have to communicate.

She never spoke unless spoken to, and then replied briefly and petulantly, which may be mentioned to account for the meagre history of the case. She was placed upon a tonic and specific treatment, with a nutritious diet.

March 27th. Fever, hot skin, flushed cheeks, accelerated pulse passed off in three days, under appropriate treatment.

April 10th. The vaginal discharge had ceased. She was terribly emaciated. Ol. morrhuæ was ordered, in hopes of fattening her, and used for three months without benefit, then discontinued from the nausea caused by it. Auscultation and percussion revealed no disease of the lungs. The urine, on standing a little while, let fall a thick, creamy, yellowish opaque deposit to the bottom of the vial. This deposit, under the microscope, presented the appearance of pus granules, and the addition of liquor potassæ produced its peculiar action. The amount of urine passed in the day was normal; the specific gravity also. No albumen could be discovered in it from time to time; no hæmaturia while under observation. To remove all doubt as to the source of the pus, a specimen of urine, drawn by catheter from the bladder, was subjected to examination. This produced the same results. The pus was thought to come from the kidney. A circumscribed tumor, dull on percussion, in the left hypochondriac space, could be felt on relaxing the muscles of the thigh and abdomen. Posteriorly, the tumor presented a slight bulging externally. It was painful upon firm pressure being made on it. As symptoms of exhaustion began to show themselves, milk-punch and wine were added to the treatment.

July 16th. The patient at this time presented typhoid symptoms which, however, seemed readily amenable to treatment, temporarily at least. The tumor remained as at last notice, neither diminishing nor showing any signs of marked increase.

July 24th. So far the patient has been remarkably taciturn, but fretful when moved in bed. Now, she seems more indifferent to matters around her. Sleeps most of the day and night. Has involuntary discharges from the bowels and bladder. She now most plainly begins to sink. There were frequent spells of vomiting, the matter ejected being of a glairy, brownish nature, at times nearly of a chocolate color. The patient continued to sink, and died August 17th.

Autopsy ten hours after death.—Body more emaciated than Dr. Hall had ever beheld before—the thighs could be spanned by the thumb and forefinger. Cadaveric rigidity not well marked. Head—there was from f℥iv. to f℥v. of serum in the sac of the membranes, and in the lateral ventricles. There were no changes in the brain substance. Thorax, heart, and great vessels perfectly healthy. Lungs perfectly healthy, but exceedingly pallid, floating like a cork in water. Liver merely pallid. Spleen normal, if anything rather small. Right kidney smaller than usual, somewhat congested; right ureter healthy. Left kidney very much enlarged, looking like a large oblong tumor, as it laid in the left lumbar region; it was raised with difficulty from its bed, being bound down firmly to the surrounding textures. The capsule of the kidney was firm and dense, cutting like cartilage, produced, it was thought, by chronic inflammation. In removing the organ, an accidental cut was made across the ureter, close to where it emerges from the kidney; a few drops of curdy pus protruded from the orifice. The kidney measured seven and a half inches in length, and weighed fifteen ounces—nearly three times its natural size and weight. On making a section of the organ, it at first appeared to be one mass of pus; but on washing away some of this, its structure did not appear to be entirely destroyed. The cortical portion was that most affected; in it were several abscesses of different size, the largest probably as big as a walnut. The cavities of these abscesses were ragged and sloughy; the tissue a little beyond and around them was condensed and hardened. The tubular portion of the kidney appeared to be comparatively little involved. The left ureter was enlarged to twice the size of its fellow, and its coats were thickened; it was pervious throughout its course. The urinary bladder presented spots of injection on its mucous membrane. Uterus presented nothing peculiar. The left ovary contained a large cyst. Vagina—traces of inflammation, deep-red injection, especially near the os uteri; there was no hymen.

This case presents many points of interest. In the first place, the possibility of the communication of the inflammation from the vagina to the bladder, thence by the ureter to the kidney, thus producing the mischief that resulted in death. Secondly. The absence of albumen in the urine, as examined from time to time; the normal specific gravity always exhibited; the natural quantity of urine passed in the day. Thirdly. The absence of œdema, or dropsy of the lower extremities. Also the absence of constitutional irritation in proportion to the amount of disease present. Also, the form and character of pain were not such as the gravity of the lesion would seem to warrant.

A point that should further not be overlooked, was the small size of the right kidney, considering the double service that it had to perform, the left kidney being totally useless as an excreting organ. That it, the right kidney, was not hypertrophied is a matter of great surprise.

Dr. Levick stated that he remembered the urine in the case just reported by Dr. Hall to have contained pus. Toward the close of her illness, a swelling was observable over the region of the kidney. The specimen he had believed, when he examined it, to have been a scrofulous or tuberculous kidney.

DR. GROSS thought the kidney had more the appearance of encephaloid, than either of suppurative nephritis or of tubercle. Simple suppuration would not present the organ so much increased; for tubercle, also, the kidney is too voluminous, and the absence of tubercle in other organs is against its being such. Dr. Gross then inquired if any members of the Society had observed tubercle of the kidney unassociated with that of the lung. He had seen a case of this kind, in which the left kidney alone was the seat of the disease. There was a psoas abscess, and five ulcers were found in the urinary bladder.

DR. LEVICK also mentioned a case affecting only the left kidney.

DR. DARRACH had had two cases of tubercle of the kidney come under his notice, in one of which no tubercle at all existed in any other organ of the body, while in the other there were some scattered miliary tubercles in the lung. In the first case, one kidney only was found to be affected. The urine contained a heavy deposit, which, when examined with the microscope, showed corpuscles like those of tubercle, and having the same reaction with acetic acid. In the second case, there was extreme diuresis, and no evidence of tubercle in the urine.

Dilatation of the Heart; Insufficiency of the Tricuspid Valve.—DR. PACKARD made the following remarks on the pathological appearance of a case of extensive dilatation of the heart, accompanying disease of the tricuspid valve:—

A boy, aged sixteen, had been troubled with a slight cough for several years; according to the account given by his friends, he never had suffered from rheumatism; he had, however, always been somewhat weakly. Owing to circumstances, I had only the opportunity of making an autopsy, without having examined him during life; and these notes are presented simply because the lesions described therein have seemed to me difficult to explain.

Autopsy twenty-six hours after death.—Rigor mortis well pronounced. Body small and ill-developed, and much emaciated; some œdema of the extremities. On cutting through the sterno-costal cartilages, a considerable quantity of clear, yellow, somewhat ropy serum escaped. The two layers of pericardium were almost universally adherent, the exception being over a portion of the right ventricle and auricle, and over the commencement of the pulmonary artery; here a good deal of clear, yellow, jelly-like lymph had been thrown out, evidently very recently, so as at once to make and to occupy an interspace; I presume the yellow liquid, before alluded to, was the thinner portion of this lymph. The heart was about eight inches in length; its walls did not seem much thickened, except those of the right ventricle, which were so to a considerable degree. All four of the chambers were of increased capacity, especially the left auricle, which would have contained about six fluidounces; just above its auricular appendage was a secondary pouch formed in the anterior wall of the sinus venosus, like a sacculated aneurismal dilatation; it was about one inch in length, formed mainly of endocardium, and would readily admit the point of the fore-finger. On the right side, the auriculo-ventricular valve had but two flaps, one of which was so closely adherent to the septum ventriculorum as scarcely to admit of the insertion of the finger or knife-handle beneath it; the closure of the orifice was decidedly insufficient. The corresponding valve on the left side was somewhat thickened and insufficient; its chordæ tendineæ and columnæ carneæ were of more than normal volume. Both sets of semilunar valves were healthy, as were also the great vessels, as far as traced. No signs of endocarditis presented themselves. The lungs were healthy; but there were calcareous deposits in some of the bronchial glands. Liver, kidneys, supra-renal capsules, and spleen normal.

The pericarditis was here evidently the latest lesion; but I am completely at fault to explain the rationale or the order of sequence of the other abnormal conditions. On the left side, where the insufficiency of the auriculo-ventricular valve was less marked than on the right, and where consequently there must have been less regurgitation, the auricle was hypertrophied to a far greater degree. The adherent flap of the right auriculo-ventricular valve I presume to have been rendered so by some former attack of endocarditis; but such adhesions, I believe, are very rare; nor are cases of non-rheumatic peri or endocarditis frequently met with.

WEDNESDAY EVENING, March 10th, 1858.

The President, DR. GROSS, in the chair.

Malformation of the Heart, Communication between the two Ventricles, and between the Auricles; Cyanosis.—DR. DARRACH exhibited a malformed heart, taken from an infant, aged eight weeks, of German parents: child was blue from birth; cried with much strength; tongue blue.

Sectio cadaveris twenty hours after death.—Head not examined. Thorax —lungs somewhat collapsed, no adhesions, of a florid hue, easily inflated with air from a pipe introduced into the trachea. Heart—small amount of fluid in pericardial sac, pericardium healthy; heart of a modena hue, coronary arteries empty, veins full; organ of a roundish form, looking, as was remarked, like a fish's heart. The aorta was situated to the right side, and much larger than normal. The pulmonary artery, instead of occupying its usual position in front of the aorta, was situated at the left side of it, and about one-fifth or less of its usual size. On opening the heart, the aorta was found to arise from the right ventricle, and an opening, *about large enough to admit a large quill*, semilunar in form, existed at the upper portion of the septum ventriculorum. There was an entire obliteration of the pulmonary artery at its junction with the heart; but from this point upward it was pervious to the lungs, communicating with the aorta through the open ductus arteriosus. The walls of the two ventricles were nearly of the same thickness, the left a little thicker than the right; the auricular ventricular valves were healthy; the semilunar valves were also normal. There was an entire want of the septum auriculorum. Abdomen—the viscera were all healthy. There was an anomaly in the vena cava, which should be noticed It divided soon after leaving its fissure in the liver, into the two iliacs; the renal veins thus being given off by the iliacs.

At first glance there appeared in this case nothing but disorder, or an entire pathological condition; but, on more careful and thoughtful examination, we can perceive, as in all disease, the workings of a "protective" as well as a "destructive principle." The grand fault of nature in this case was no doubt the closure of the pulmonary artery, thus preventing the exit of the blood from the right ventricle; and unless some substitute for the pulmonary artery could be made, all circulation must have ceased. This was accomplished by shifting the aorta to the right side; and that the left ventricle might not be neglected, an opening was made, acting as a communication between the two ventricles; and so that the blood could reach the lungs, the ductus arteriosus was left open. We had, then, functionally, but one ventricle, and on this we are able to explain the want of septum of the auricle; for, having but one ventricle, we needed but one auricle, making thus a batrachian heart.

Ovarian Cyst in an Infant eight weeks old.—On removing the uterus of the above infant, a cyst was found, developed from the left ovary, about the size of a small marble.

DR. KEATING inquired whether there had been atelectasis at birth.

DR. DARRACH.—None; the child screamed lustily as soon as extruded.

DR. DARRACH exhibited another specimen of open foramen ovale. The heart was obtained from an adult man.

DR. KEATING spoke of several cases of open foramen ovale which had come under his notice, in which the persons had not suffered any inconvenience. In one case the sixtieth year was attained without there being any cardiac, pulmonic, or other disturbance. Dr. Keating, in reviewing the opinion held with regard to the open foramen ovale being the essential cause of cyanosis, expressed his dissent from this view. Obstruction of the pulmonary artery he believed to be a more active cause. But he had seen want of expansion of the lung at birth, unconnected with either of the above-mentioned states, give rise to the blue appearance, which had disappeared under appropriate treatment.

DR. DARRACH inclined to the belief that obstruction of the pulmonary artery was mainly concerned in the production of cyanosis. He alluded to the statement of some authors, that the foramen ovale was kept open by nature, on account of the obliterated pulmonary artery, so as to act as a safety-valve.

DR. MITCHELL suggested as the reason why an open foramen ovale might exist during life without occasioning any disturbance, that in reality no venous blood would mix or circulate with the arterial, owing to the left auricle being stronger than the right. Its more powerful muscular fibres would send arterial blood to the right side of the heart, which, of course, going to the lung, would come back to the left auricle; but no venous blood, owing to the feebler contraction of the right auricle, could get into the left side of the heart, and from there into the general circulation.

DR. DARRACH thought Dr. Mitchell's theory to explain the absence of cyanosis, where an open foramen ovale existed, was open to objections, and mainly on account of its anatomy. It had appeared to him in dissection of the heart, that no difference between the auricles occurred. If any, the right was the most powerful.

Encephaloid of the Kidney.—DR. DARRACH next exhibited a specimen of fungoid cancer of the kidney, with accompanying microscopic drawings. The history was given as follows:—Mr. B., aged fifty-three, German, married; large; generally enjoyed good health; steady drinker of brandy. The attending physician stated that four years ago he fell heavily upon his back, and from that time had felt almost constant pain in the right lumbar region. About a year before his death he passed a large amount of blood by the penis, and had had several hemorrhages since, up to his death. I examined his urine several times, a short time before death, but found nothing abnormal, with the exception of blood, and bile coloring matter. The urea was in normal quantity. The patient suffered very much from the pain in the lumbar region, during the latter part of his sickness. A marked amount of effusion accumulated in the abdomen at one time, which accumulation, together with a yellow hue of skin, and bilious urine, led to the diagnosis of cirrhosis of the liver. A few days before death, our attention was attracted to the right lumbar region, from his complaining of pains, when a nodular lump was felt, and on percussion marked flatness was perceived. At first, the liver was thought to be enlarged, and extending into the lumbar region; but as the fingers could be passed between the lower edge of the liver, and this nodular mass, by a process of exclusion, and taking into consideration the history of the case, and the bloody urine, we came to the conclusion that he had a cancerous kidney as well as cirrhosis of the liver.

Sectio cadaveris.—The head and chest were not examined.

Abdomen—there was considerable effusion in the peritoneal sac. The organs all appeared healthy, with the exception of the liver and the kidneys. The liver was enlarged and granulated, especially on the under surface, and of a brownish-yellow hue. The right kidney was about three times as large as normal, very much misshapen and nodulated, the size of the nodules varying from that of a small to a large walnut, some of them of a dark-black color, the rest of them, with the other portions of the organ, being of a light-yellow and red hue; the surface was much marked by brightly injected vessels, many of them having a stellate arrangement. On opening the kidney the nodules were found to be cysts; the dark-black ones filled with coagulated blood, while the others contained matter having a mottled-white, yellow, and red appearance, not unlike a well-marked nutmeg liver; this, on examination with the microscope, was shown to consist of oil globules in abundance, granular matter, and cells, which had the appearance of ordinary kidney-cells, many of them entirely filled with oil globules, others partially so, and exhibiting their nuclei. The left kidney was much hypertrophied, but to the eye, and under microscopical examination, there appeared nothing abnormal.

DR. WOODWARD showed a heart-clot, taken from the right side of the heart. It had probably formed before death, and consisted of white masses of unorganized fibrillated fibrine. The man—a sufferer from valvular disease of the heart—died suddenly. The aortic valves were much diseased. Dr. Woodward brought forward this specimen to disprove the opinion that heart-clots can only be formed during a protracted agony. This had formed in a case in which death was not protracted.

DR. FORBES, who had examined the heart from which this clot was taken, when recent, stated that in addition to the extreme ossification of the aortic valves, the valves on the right side of the heart had been diseased. Those of the tricuspid were thickened, those of the pulmonary artery rigid from a deposit. The left auricle was extremely thin and dilated.

Hepatic Abscess discharging through the Lung.—**DR. MOREHOUSE** called the attention of the Society to a large hepatic abscess. The patient from whom the specimen was taken suffered with repeated attacks of dysentery from early in September last until late in December, the date when disease of the liver became manifest. The attacks were frequent, almost running one into another, but so mild as scarcely at any time to confine him to the house. On the 25th of December he felt chilliness, loss of appetite, with slight fever at night, but attributed them to a cold, and was content to take such measures for their relief as his own judgment dictated. He continued to go out, in spite of his increased sickness, until the 1st of January, when he was suddenly bent double with pain in the right side, and in that condition brought home cold and prostrate from the intensity of his suffering. This pain continued, with slight remissions, until he died, on the 27th of February. During the progress of the abscess there was occasional nausea, and in the latter weeks, pain in the right shoulder. The dysentery disappeared entirely, as also the tenderness of the abdomen, except over the liver. The right side enlarged, with dulness on percussion over the epigastric and right iliac regions. The sixth and seventh ribs were widely separated, and in the intercostal space obscure fluctuation could be detected. Such was the condition until a few days before his death, when he was seized with a suffocative paroxysm, followed by the expectoration of a pint or more of "dirty red, puriform matter," considered by some as pathognomonic of abscess perforating the lung. At the end of two days the purulent expectoration had nearly ceased, although a constant hacking cough, with oppressed breathing, still remained. The enlargement of the side was not apparently reduced by the discharge, but the pain was very decidedly relieved. Five days after the opening of the abscess he died.

Post-mortem examination.—The body was emaciated, but not in the least discolored ; the right side was very prominent, and fluctuation was evident between the sixth and seventh ribs and along their lower border as far forward as the epigastrium. On opening the abdomen, the liver was found attached firmly to its walls, from the ensiform cartilage to the lower border of the iliac region. The right lobe, in which alone disease existed, was converted into an immense cyst, from which was taken six pints of pus, similar in color and consistence to that expectorated a few days previous. There were, however, shreds of tissue, and a layer of white pus adhering to the disintegrating surface of the liver, which contrasted strongly with the prevailing color of the mass. The diaphragm formed the upper wall of the abscess, and at one point presented the appearance of having been perforated, but was now entirely closed. The left lobe was natural in size and structure. The gall-bladder contained about half a gill of thick bile, which was so inspissated and hardened at the neck as to be readily discerned from the outside. In the large intestine were three cicatrices of ulcers, two in the cæcum and one in the descending colon, probably the most recent. The lower lobe of the right lung was infiltrated with colored pus, and adherent by its base to the diaphragm to an extent not exceeding two inches in diameter. In the apex of each lung were tubercles, some of them undergoing calcareous transformation. Throughout this case there was not the slightest jaundice, nor could bile be detected in the urine by its color, or by the reaction of sulphuric acid. This is most remarkable, considering the extensive disorganization of the liver, and the consequent suppression of two-thirds, at least, of its secreting power. It cannot be supposed that the remaining left lobe, which was not enlarged in mass, and did not indicate under the microscope an increased number of secreting cells, could assume the functions of the entire organ. Moreover, this conclusion is disproved by the occurrence of jaundice in cases of obstruction of the right hepatic duct, when the same amount of secretive tissue, as in this specimen, remains unimpeded in function. The evidence of this case, therefore, would seem to conflict with the theory that bile exists as such in the blood, and that deficiency of its elimination is the proximate cause of jaundice. Most of the cases of hepatic abscess of the right lobe that have been recorded, corroborate this view. Out of those given by Annesley, in his work entitled *Researches on the Diseases of India, and of Warm Climates*, among which are several where the function of the liver was more completely destroyed than in the case above cited, there is not one mentioned where jaundice occurs as a symptom. Andral, in his *Medical Clinic*, records one case with jaundice, but then the abscess was on the lower surface of the right lobe, and very liable to compress the hepatic ducts, which converge toward that part of the liver.

DR. GROSS did not feel quite satisfied that the matter expectorated came from the hepatic abscess. No seat of perforation was visible, and the abundant secretion might have come from the inflamed bronchial tubes and parenchymatous structure of lung.

DR. MITCHELL suggested that inflammation might have so closed up the opening into the lung as to prevent this from being discovered.

Fibrous Tumor of the Uterus removed during Labor.—DR. KEATING exhibited a specimen of fibrous tumor of the uterus, and accompanied it by these remarks:—

I was called to attend Mrs. W., of Vine Street, in her fourth confinement, at 3 A.M. on Monday the 14th of February.

Mrs. W. enjoyed excellent health during the whole period of gestation; but her enormous size had caused her to believe that she was pregnant with twins. About eighteen months previous I had delivered Mrs. W. of a still-born female child, presenting in the second position of the breech. The child seemed to have died some hours before the access of labor; and as the delivery was rapid, and in every respect natural, I was at a loss to account for its death, all attempts at resuscitation proving useless.

Upon entering the room on the morning of the day mentioned, I was informed by the nurse that the membranes had ruptured, and that a large amount of liquor amnii had been discharged. Upon making a vaginal examination, my finger came in contact with a large fleshy mass, which at first I considered a placenta prævia; but as the hemorrhage was inconsiderable, and a second examination did not confirm my suspicions, and especially as the os uteri was not dilated beyond the circumference of a half dollar, I concluded to await further dilatations of the os uteri previous to deciding as to the presentation. The labor-pains were slight and irregular, producing but little effect; the os remained firm and undilatable, but a portion of it seemed to be included within the presenting body, so that I could not with certainty define the posterior lip of the os uteri.

At 6 A.M., finding that the labor seemed obstructed, and that the contractions of the fundus uteri had but little effect upon the os, and not being able as yet to ascertain the presentation, I resolved on dilating with my finger the anterior lip of the os uteri. I succeeded partially, but met with great difficulty, from the size and resistance of the presenting body, which seemed completely to fill up the opening of the uterus. My examination, however, was sufficient to convince me that I had not to deal with a case of placenta prævia. From this I surmised that the body in question might be one of those cystic tumors of the nates, two cases of which have been presented to the Society by my friend Dr. Keller.

Finding at 6½ A.M. that the labor made no progress, and being still uncertain as to the nature of the case, I requested a consultation with Dr. Keller. In his first examination, he was also inclined to adopt the idea of a placenta prævia, but repeated examinations, attended with some violent expulsive efforts on the part of the patient, causing a sudden and partial protrusion of the presenting body, convinced us that it was a large fibrous tumor. Subsequent labor-pains, and further dilatations of the os uteri, enabled us to detect the right shoulder of a fœtus resting upon the tumor, with the umbilical cord prolapsed and pulsating. Fully satisfied as to the nature of the case, and convinced that no delivery of the fœtus could take place without the previous removal of the tumor, we requested the assistance of Dr. Addinell Hewson, who, after careful examination, fully coinciding in our views, immediately proceeded to enucleate the tumor, preferring this method of removal to that of excision, as a matter of prudence in case of threatening hemorrhage. The pedicle of this tumor measured at least three inches in diameter, and consisted of a dense fibro-areolar membrane of the same character as that which invested the whole tumor. It was this dense and unyielding character which caused me at first to suspect that the presenting body was not placental. The enucleation was rapidly and successfully performed by Dr. Hewson, and was attended with little pain and slight hemorrhage. The tumor, upon extraction, weighed 2¾ pounds, and measured twenty inches in circumference. It was fibroid in its character, and was firmly attached to the posterior portion of the os and cervix uteri, entirely obliterating that lip of the os; its pedicle extended half an inch within the os internum, and after the removal of the tumor a sort of auricle was left, which might be considered as the undeveloped portion of the cervix uteri, the anterior portion having obeyed the usual law of pregnancy, and entirely disappeared.

From 8 to 10 A.M., the uterus remained in complete inertia, and the patient seemed exhausted. The anterior lip of the os had again contracted, and it was impossible to resort to version. A drachm of powdered ergot was administered in divided doses, and frictions applied externally over the abdomen. Subsequently we commenced dilating the os with our fingers, and succeeded in arousing some uterine contractions; version by the head was then accomplished, and the forceps applied to the head of the child as soon as it engaged in the pelvis, inasmuch as the patient was in a complete state of prostration, and made no expulsive efforts. Notwithstanding all our efforts for a rapid delivery, and our subsequent attempts by means of Marshall Hall's ready method of resuscitation, all proved useless; the child was dead. It weighed 9½ pounds.

An alarming flooding supervened after the birth of the child, which was checked by an artificial delivery of the placenta, the introduction of ice into the vagina, and by stimulating the uterus to contraction by the introduction of the hand. The patient remained in a favorable condition until the following Wednesday morning, when violent symptoms of puerperal fever set in, of a phlebitic character; in spite of all our exertions to save her, she died on the following Monday night. No post-mortem examination was allowed.

The peculiarity of this case consists in the existence and attachment of such a tumor to the os and cervix uteri without producing any morbid symptoms, and without provoking abortion in the early stages of pregnancy. Her menstrual periods had been regular as to time and as to quantity; she had never felt any inconvenience from the presence of this tumor, but I strongly suspect that its existence, though not as much developed, had caused the death of the fœtus in her previous confinement.

It is evident that such cases as these give the *coup de grâce* to the theory which makes the os and cervix uteri the guardian of pregnancy, and which claims an antagonism as existing between the fundus and cervix from the earliest months of pregnancy. Were such views correct, it is evident that the os and cervix, with such a tumor attached to their posterior parietes, would be in no condition to struggle against the supposed continued contractions of the fundus. Under such odds the early defeat of the enfeebled cervix must have inevitably resulted. Some astonishment has been manifested in reference to conception taking place under such circumstances; but a moment's consideration would suggest the response that the anormally patulous condition of the os and cervix uteri would rather favor than oppose such a result.

Report of Committee appointed to examine the Kidney presented by Dr. Hall.—The microscope exhibited what were supposed to be epithelial cells, and a large number of corpuscles, which, from their size, shape, appearance and reaction with acetic acid, resembled tubercle. Some cells in regard to size and form might be considered as pus-cells; but the reaction of acetic acid did not develope any nuclei. No cells were found which in the slightest degree resembled cancer-cells. The Committee, from a careful examination of the specimen, are disposed to believe that it is tubercular.

Signed DRS. DARRACH, PACKARD, MORTON.

WEDNESDAY EVENING, March 24th, 1858.

The President, DR. GROSS, in the chair.

Deposit in Spleen, and Fatty Degeneration of Supra-renal Capsule.—DR. HEWSON exhibited a spleen filled with deposits, a supra-renal capsule in a state of degeneration, and a gall-stone, removed at the autopsy of R. S., aged seventy-seven years, a patient of Dr. ——. Mrs. S. had been under Dr. ——'s care about seven weeks previous to her death. When first called to her, Dr. —— found her suffering with great dyspnœa at night, and complaining of pain in the left hypochondriac region. She was much icterode, and her stomach was excessively irritable. There were no signs of cardiac disease, but in the right hypochondriac region he felt some nodular masses, and supposed them at this time to be cancerous masses in the liver; and in this opinion he was confirmed by Dr. ——, who saw her shortly after with the physician first called to the case. Tongue had been furred, dry, and cracked across; thirst was never great until a week before her death, when she showed great avidity for everything to drink. There was never any great heat of skin; pulse generally about 85. Her bowels were costive, defective in bile, and she always obtained considerable relief from their evacuation.

Autopsy fifty-six hours after death.—Body not much emaciated, legs œdematous. Abdomen—liver small; its envelope in places covered with fat; organ in a state of decided fatty degeneration; gall-bladder distended, with thin fluid bile, and contained a large gall-stone, (82 grs. weight,) beautifully bright and glistening, of an orange hue, and quite translucent. Stomach not at all distended, but presenting, at its pyloric orifice, well-marked signs of long-continued gastritis. Its mucous membrane was mottled, with patches of deep dark-red, exceedingly soft and pulpy, and with spaces of beautiful arborescence. The mucous membrane of the duodenum was in the same state. There were no obstructions in the ductus choledochus or hepatic duct; pancreas was perfectly healthy. Spleen small, natural in appearance, but had on its surface two white patches of probably fibroid deposit, one the size of a pea, the other over half an inch, and extending fully that depth into the substance of the gland. Right kidney perfectly healthy; left kidney had a cyst on its surface, near the upper end of the gland; the supra-renal capsule was in a state of fatty degeneration. Bladder much distended, but healthy. Uterus small, and smooth on its external surface; was studded with melanotic deposit on its mucous surface, and there was some ulceration at the os tincæ. Thorax; heart—no great quantity of fluid in the pericardium; surface of heart covered, to some extent, with fat, organ of full size, and remarkably healthy in every respect, no paleness of structure or atheromatous deposit; aorta had a number of such deposits along its whole course. Lungs were of a dark-blue color, adherent in a number of places by old pleuretic adhesions; no signs of tubercle or congestion; both lungs were rather emphysematous throughout.

Atheroma of Aorta.—DR. HEWSON also exhibited a specimen of atheroma of the aorta, taken from a man, aged 44 years, a butcher, who died suddenly of an attack of gout affecting the heart. He had eaten a hearty supper of fish the evening before his death. The heart was much enlarged and gorged with blood, but contained no heart-clot; there was no pulmonary congestion.

Fibroid Degeneration of Liver and Kidney; Spiculated Exostosis on Tibia and Fibula.—DR. MORTON exhibited a specimen of spiculated exostosis on the tibia and fibula, from a patient whose leg was amputated on account of an indolent ulcer; also, the kidneys and liver from the same case, showing fibroid degeneration. The patient, Margaret Glenn, from whom the specimens were taken, was admitted into the Pennsylvania Hospital in January, 1858, on account of an indolent ulcer of the leg of thirty years' standing, which occupied nearly the entire circumference of the limb. She stated that at first it was small, but that repeated attacks of erysipelas left the ulcer larger and larger. Some of the veins of her leg were in a varicose condition; her health had been quite bad at times. She came into the Hospital for the purpose of having her limb amputated. She was about fifty-eight years of age, and in feeble health, with a good deal of gastric irritation, and irregularity of her bowels. Under tonics she improved much: her limb was removed by Dr. Peace. For some days after the operation her health and spirits seemed much better; but her appetite soon failed her, her bowels became quite loose, and she gradually sank, and died eleven days after the operation.

The tibia and fibula showed well the effects of a chronic ulcer, in producing a spiculated exostosis.

Autopsy.—All the organs were healthy with the exception of the kidneys and liver. The kidneys—the fibrous tunic was firmly attached to the organ, and when peeled off, brought some of the tissue with it; the kidneys were much lobulated, but the lobules quite small; on cutting the organ through, it gave the impression that it was fatty, from its striking resemblance to that degeneration, and was so pronounced, but its texture was more firm than is seen in that condition of the kidney. A microscopic examination showed an extensive fibrous deposit without any fat. The liver was very considerably increased in size, and presented also the fibrous deposit.

The attention of the Society was called to the occurrence of the fibroid deposit in the kidneys and liver, in connection with indolent ulcers. Gay ("on Indolent Ulcers") remarks that, "when a constitutional ulcer becomes indolent, there is much reason to apprehend some very serious lesion of an important organ, most frequently of the kidneys or of the liver." In the above case such was the condition.

Dr. Darrach, who had also examined a portion of the kidney with the microscope, stated that although the kidney presented the external appearance of oily degeneration, yet only a few oil globules were observed, but many fusiform cells; it was not easy to obtain a uriniferous tubule. When seen, they were perfectly or partially denuded of epithelium; their membrana propria seemed thickened; the liver presented a large excess of fibrous tissue. The case was interesting, as occurring in a person not addicted to drinking.

Dr. Woodward alluded to the fact that enlargement of the bone, under chronic ulcers, had been noticed, and especially by Paget. The spiculæ in this case might have arisen as part of the hypertrophy, or from periostitis.

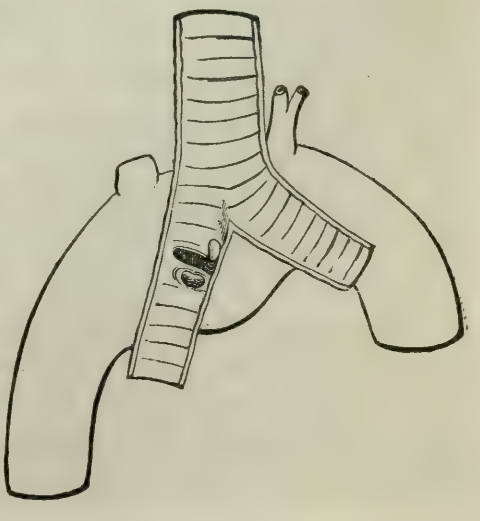
Ossific Deposit projecting into Auricle.—Dr. Forbes exhibited a diseased heart, without any history, as it was obtained from the dissecting table. Its walls were thin, and its cavities enlarged. At the seat of the foramina of Thebesius were extensive ossific deposits, which projected into the right auricle.

Aneurism of the Aorta bursting into a Bronchus.—Dr. Forbes next directed the attention of the Society to an aneurism which had ruptured into a bronchus. The patient had been attended by Dr. Turnbull, who gave the following account of the case:—I was called to see Nicholas Harris on the evening of the 20th March, 1858. He is a cutter for a large tailoring establishment in this city. He gave his age as thirty-two years; said he had been frequently sick, with pain and cough for more than a year; he had been a soldier during the Mexican war, when he contracted severe rheumatism, and had suffered since that time from intermittent fever. For the last six weeks he had been troubled with a severe influenza, and was much depressed on account of want of occupation; but a few days since he had been very much engaged cutting out clothing, causing him to stand and to stoop, and from the excessive fatigue he had fainted, and was brought home in a carriage. I found his skin warm and dry, his tongue coated and white, pulse feeble and rapid. He complained of pain in the upper part of the sternum, with a feeling of oppression.

Physical examination.—There was dulness on percussion over the whole of the left side of the chest, with bronchial respiration. On the right side percussion was morbidly clear, and auscultation discovered the inspiratory murmur quite feeble, with the expiratory murmur labored and wheezing. The action of the heart was rather loud. He complained of being feeble; could not sleep at night; would frequently get up on his hands and knees in bed to relieve his oppression. He had been taking a cough mixture made by his mother, which was exchanged for 10 grs. of Dover's powder, to be taken at bedtime.

On Saturday morning he felt better; had slept part of the night. Sunday morning, 9 o'clock, thirty-six hours after the first visit, he appeared languid; his skin was sallow; the pain in the front part of the chest had gone to the back. While half-reclining on a high settee, and resting on pillows, and speaking of his symptoms, he gave a deep moist cough, and raised his head to expectorate in a spittoon on the floor, and while in the act of turning, there came from his mouth and nose a series of gushes of blood, giving him no time to speak, or swallow, or breathe. He raised himself from the settee, and being unable to stand, the blood continuing to flow, he was placed on the floor on his side, when he gave a convulsive movement, and was found drowned in his own blood.

FIG. 5.



Post-mortem examination.–The body was natural, the heart normal; the aorta was much dilated at its arch, its coats thickened; an ulcer existed in them. The seat of perforation into the bronchial tube must have been small and then enlarged; the spot of perforation was eliptical, (see Fig. 5,) and partly closed by a new formation. The whole lung was filled with blood.

Dr. La Roche inquired into the state of the mucous membrane.

Dr. Forbes stated that it was but little altered; a membrane seemed to stretch across the opening into the bronchial tube. With regard to the exact amount of dyspnœa latterly present, he did not know whether it had been a constant, or merely an occasionally violent symptom.

Dr. Stillé remarked that the physical conditions were such, that, if any cause had disturbed the circulation in the part, difficulty of breathing by pressure on the membrane in the bronchial tube would have resulted.

Fatty Liver.—Dr. Humphreys exhibited a fatty liver, weighing nine and a half pounds, taken from a patient who died in the Pennsylvania Hospital, of effusion in the brain, consequent upon mania-a-potû. The kidneys were much enlarged.

Kidneys and Brain of a Diabetic Person.—Dr. Humphreys exhibited the kidneys and other organs of a case of diabetes. Pat. Dorken, aged forty-six, Irish, admitted into the Pennsylvania Hospital March 8th, with diabetes in an advanced stage. Had known of the existence of the disease for more than two years. He was much emaciated and exceedingly feeble, with great thirst, dry skin; passed daily from seven to ten pints of urine, of an average specific gravity of 1035. There were also well-marked symptoms of phthisis. About the 25th March a slight erysipelatous blush appeared upon the face and neck, accompanied with great prostration. The patient gradually sank, and expired March 28th.

Autopsy.—Right lung almost solidified, with small tortuous cavities at its top. Left lung healthy. Liver in a state of cirrhosis. Kidneys somewhat engorged, but otherwise healthy. Brain—membranes somewhat injected; dura mater somewhat adherent at the top.

Colloid Cancer of the Omentum.—Dr. Gross exhibited a specimen of colloid tumor, for which he expressed his obligations to Dr. Van Wyck, of this city, who had removed it a short time previously from a man, aged fifty-four years, a tailor by occupation, of spare make, and temperate habits. The morbid growth had been first observed about two years before death, having commenced in the left iliac region, from which it gradually extended in different directions until it filled the whole abdomen. Dr. Van Wyck had attended the man for about twelve months, when the tumor was nearly as large as at the post-mortem examination. The principal symptom was an extreme sense of weight and oppression in the abdomen, attended with considerable dyspnœa, especially when he suffered from constipation, to which he was very subject. He was but little emaciated, and there was hardly any œdema of the extremities. On dissection, it was found that the whole peritoneal cavity was occupied by an enormous colloid mass, reaching from the pelvis up to the diaphragm, which it had pushed high up into the chest, covering completely the abdominal viscera, and effacing all trace of the serous cavity. It weighed upward of twenty pounds, and was fully two inches and a half in thickness, whitish in its appearance, and composed of numerous characteristic cysts, from the volume of a mustard-seed to that of a small hickory-nut. All the abdominal, pelvic, and thoracic viscera were sound. A microscopic examination by Dr. Da Costa, showed small cells, indistinctly nucleated, fibres, and an amorphous basement substance.

DR. GROSS stated that he himself had seen two similar examples, which are briefly described in the new edition of his *Pathological Anatomy.* The subject of the first case had been a man, forty-nine years old, who had an enormous colloid tumor, which extended from the liver to the pelvis, and involved the colon and greater part of the stomach, the abdominal viscera being greatly compressed and almost hidden behind the morbid mass. In weight it was found to be about twenty-five pounds, in thickness from two and a half to three inches, and measured in length nearly one foot, and in breadth over eight inches. In structure it was made up of innumerable masses, varying in size from a mustard-seed to a hickory-nut, and its appearances were denotive of its having been developed in the peritoneum or great omentum, the latter of which was effaced. The liver was diminished in volume, from the pressure of the tumor, but was otherwise healthy, and the thoracic and abdominal viscera were perfectly normal.

The second case occurred in a gentleman, forty-five years of age, who died in a state of complete exhaustion, after the disease had existed for about two years. The whole peritoneal cavity, with the exception of a small portion over the right lobe of the liver, was obliterated and occupied by an immense tumor, extending from the neck of the bladder to the diaphragm, which was pushed high up in the chest. All the pelvic and abdominal viscera were inclosed in the mass; but were free from colloid disease. The colloid structure was well marked, being composed of cells, the largest of which were about the size of a hazel-nut, and filled with a pale greenish jelly-like substance.

DR. HEWSON inquired if dropsy had been present.

DR. GROSS. None.

DR. HEWSON had had three cases of colloid of the peritoneum come under his notice. Two occurred in one family. Both had marked dropsy, and died within one year of each other. In both cases the surface of the peritoneum was studded with colloid. In a third case, the colloid deposit was most marked on the under surface of the liver, and on the surface of the uterus and ovaries. A large cyst in the ovary was filled with colloid. This case was tapped during life, and a serous fluid evacuated, which gelatinized on standing.

American Progress of Medical Science.

REPORT ON PRACTICAL SURGERY FOR THE YEAR 1857.

By EDWARD HARTSHORNE, M.D., one of the Surgeons of Wills' Hospital, Philadelphia.

THE unavoidably short time allowed, on this first occasion, for the examination of the journals and society transactions of the past year, required in the preparation of a review of the more important contributions to the literature of the practical surgery of the period, has rendered it impossible to present a satisfactory notice of much that might with advantage be included under such a head. Want of space also, as well as want of time for the necessary condensation, has obliged the reporter to pass over many articles of value, and to confine himself strictly to the analytical exhibition of the most available portions of such papers only as appeared to possess the greatest practical importance, or were essentially novel or rare in the nature of their topics. Many subjects have been omitted altogether, to be taken up separately in a future number, or in other periodical reports; while the consideration of elaborate monographs, such as the well-known papers of Dr. F. Hamilton on Fractures, has to be postponed. It is not in the power of the reporter to present a full analysis of the contributions to be noticed; nor will any material space be taken up with comments or annotations. The province of his report, therefore, must be that of an indicator only; and with this view a mere reference, in some instances, may be made to serve the purpose of a more extended account.

Post-Fascial Abscess, Originating in the Iliac Fossa, with a New Method of Treatment. GURDON BUCK, M.D., Surgeon to the New York Hospital. (N. Y. Journ. of Med., March, 1857, p. 147.)—This interesting paper presents a minute history of seven cases of "a class of abscesses which," says the author, "might easily be confounded with others, the prognosis of which is less favorable, and in which the same treatment might hasten the fatal termination to which they so generally tend. The particular mode of treatment adopted in these cases, it is believed, has not hitherto been generally employed. It was first suggested by a careful study of the surgical anatomy of the parts involved; and the successful results which have followed its use may claim for it a favorable consideration."

We regret being obliged to omit the details of the cases, and to confine our quotation from the narrative to the author's description of his method of opening the abscess. It is given, in the account of the first case, as follows:—"An incision, one inch in length, was made at a finger's breadth below the middle of the outer half of Poupart's ligament through the skin, subcutaneous tissue, and fascia lata; a probe was then passed deeply upward and backward, and on being withdrawn, was followed by an escape of pus; whereupon the track of the probe was enlarged, and a free outlet afforded for the contents of the abscess, with evident relief to the patient." In another case, after the incision "down through the fascia lata," a grooved exploring needle was passed upward and backward to the depth of about two inches; the opening was then enlarged and the matter withdrawn. In a third case, the incision through a tense and unyielding fascia was followed by the introduction of a trochar exploring needle in a canula, up and backward into a free cavity, from which pus escaped through the canula. In a fourth case, after the incision and passing of the needle trochar and canula, upward and backward behind Poupart's ligament, a freer outlet was secured by the enlargement of the track, with a narrow-bladed knife passed along the side of the canula before its withdrawal, and by the subsequent temporary employment of a tent.

We append the concluding remarks without attempting to condense them.

"Of the seven cases reported above, five were males and two females. Their ages ranged from twelve to fifty-four years. In four of their number, the disease occupied the left side; and in three, the right. In one of the two female patients, the disease occurred during the puerperal state.

"*Anatomy.*—The importance of an accurate knowledge of the relative anatomy of the parts involved in this form of abscess will be admitted, if it is remembered that both the diagnosis and treatment are based upon it.

"The crural arch, which is spanned by Poupart's ligament, is divided into two halves, by a strong process of aponeurosis, sent off posteriorly from the middle of this ligament, and inserted into the ileo-pectineal eminence. The inner half serves for the passage of the great blood-vessels, lymphatics, etc.; the outer for the psoas magnus, and iliacus internus muscles, and crural nerves. The fascia iliaca, of which the above process is also a continuation, is a strong aponeurosis, which is continuous upward with the outer half of Poupart's ligament, and spreading out over the anterior face of the iliacus and psoas magnus muscles, is inserted outwardly into the inner margin of the crest of the ilium, and inwardly into the linea ileo-pectinea. It is also prolonged upward upon the psoas, as high as its origin from the lumbar vertebræ. Below Poupart's ligament, and continuous with it, the fascia lata covers the psoas and iliacus, in common with the other muscles of the thigh, and, at the inner margin of these two gives off posteriorly a septum, which is continuous above with the process of aponeurosis, already described as inserted into the ileo-pectineal eminence. Now, if an incision be made parallel with Poupart's ligament, and below its outer half, down through the fascia lata, the psoas and iliacus muscles will be exposed, and the fingers can be passed upward behind Poupart's ligament so as to arrive in the fossa, behind the iliac fascia. The same track can be followed from above downward, by incising the iliac fascia transversely, and passing the fingers downward behind it and the outer half of Poupart's ligament, till they arrive on the anterior face of the thigh. Here, then, we have a well-defined track, bounded posteriorly by a bony surface, anteriorly by a strong fascia, and shut in on either side by the insertions of the fascia into the bone. Suppuration taking place in this track could only reach the surface through the fascia, by the slow and gradual process of ulceration and absorption.

"*Pathology.*—The able author of an article in the *British and Foreign Medical Review*, (page 456, April No. for 1840,) remarks:—'An abscess in the cellular tissue of the right iliac fossa, when it does not result from a blow or external wound, from perforation of the appendix or cœcum, or from child-birth, is, we believe, in almost every instance, the consequence of disease of the bones, either of the back or pelvis. There may be cases in which an abscess forms in the iliac fossa from idiopathic inflammation of the cellular tissue, but we have never seen one.' Several of the cases narrated above prove, as we believe, beyond a doubt, that suppuration may take place in the iliac fossa behind its fascia, unconnected with caries of the lumbar vertebræ or pelvis, or morbid lesions of the cæcum or colon. There is no reason why the cachectic condition, upon which the formation of abscesses depends, may not manifest itself in this particular region as well as in any other of the body. The functions of the psoas and iliacus muscles render them liable to the injurious effects of over-straining efforts, and such efforts may be the exciting cause of suppurative inflammation in the cellular tissue surrounding these muscles, especially where a general cachectic condition coexists to favor it. Such seems to have been the fact in Case No. 4.

"*Causes.*—In Case No. 1 the irritation was propagated in the course of the absorbent vessels, which had recently been the seat of inflammation, resulting in numerous small subcutaneous abscesses along their track from the inner ankle to the groin.

"In No. 2, which was a remarkable example of cold abscess, the patient, though apparently in good health when the abscess was *opened*, exhibited, subsequently, all the signs of tubercular cachexia.

"In No. 3 a low cachectic condition, induced by copious suppuration following erysipelas of the face and scalp, coincided with the development of suppurative inflammation in the iliac fossa, without any obvious exciting cause.

"In No. 4, after violent efforts, by which the psoas and iliacus muscles were over-strained, pain and lameness first seated themselves in the iliac region; and at length, while the system was suffering under depressing influences, suppuration developed itself.

"In No. 5, the only case of an adult female, the disease originated in the puerperal state.

"In No. 6 the patient's whole aspect was expressive of a hereditary scrofulous diathesis, which had manifested itself previous to the suppuration in the iliac region, by the development of a large abscess in the axilla.

"In No. 7, the escape of a foreign body from the intestine (probably the cœcum) first excited suppurative inflammation, and its protracted sojourn in the abscess perpetuated its continuance for a long period.

"*Diagnosis.*—Other forms of abscess, besides the one in question, are found located in the iliac region, which it is important to distinguish.

"1. In this, as in other regions of the abdomen, suppuration may take place in the muscular parieties, or in the cellular tissue between the muscles and peritoneum. Such an abscess would not, however, be confined within the same precise limits; nor, in case it was seated in the cellular tissue of the fossa anterior to its fascia, could it extend behind or below Poupart's ligament. Retraction of the thigh would not be produced by it, and adhesion of the skin and subjacent tissues, as well as redness and inflammatory œdema, would take place early in its progress.

"2. Abscesses form in consequence of perforation of the vermiform process and cœcum. The suppuration in this case is commonly confined by adhesions between the peritoneal surfaces of the intestines and parieties, and the tumor produced is not confined within the same anatomical limits as the abscess in question. The same deviation from the anatomical characters already so often insisted on, is observable in abscesses produced by fecal obstruction, as well as those that are developed in the appendages of the uterus during the puerperal state.

"Ordinary psoas abscess, which is understood to depend on disease of the vertebræ, may and does, in its descent along the psoas muscle, sometimes keep behind the iliac fascia, and occupy the same track as the idiopathic abscess; but its connection with the vertebræ can be readily ascertained by careful inquiry.

"4. The question may arise, whether caries of the os ilii itself may not cause suppuration in the fossa, and present a swelling confined within the same anatomical limits. Doubtless it may, and so also may a fracture of the ilium. The author believes he has seen such an example after fracture, where, besides other abscesses around the pelvis, one formed and occupied exactly the limits of the fossa, and was evacuated by an opening made below Poupart's ligament.

"The true post-fascial abscess originating within the iliac fossa from idiopathic inflammation of the cellular tissue, may be described as follows:—It presents itself, though much more rarely, in a chronic as well as acute form, and locates itself in either the right or left iliac region. Though it may occur in early youth, it is most frequently met with in adult age, and affects alike both sexes. The tumor which it forms rises up from the hollow of the ilium, pushing before it the fascia and outer half of Poupart's ligament, so that the crest of the ilium and the anterior superior spinous process can no longer be grasped between the thumb and fingers. The outer half of Poupart's ligament is rendered tense and unyielding, and a deep-seated induration may extend two or three fingers' breadth below it. The precise limits of the swelling can only be appreciated by the touch and percussion over its abdominal portion; upon the surface the eye only perceives a fulness or a diffused swelling of these parts. No increased heat or redness of the skin existed in either of the cases above narrated. In four of them (Nos. 1, 4, 5, and 7) no fluctuation could be detected; in two (Nos. 3 and 6) it was obscure and doubtful; while in one only (No. 2, the cold abscess) it was unequivocal. In all (except No. 2) the thigh was retracted, and attempts to straighten it caused pain. In all the cases (except No. 2) constitutional disturbance and fever accompanied the local disease. In all the acute cases, the absence of heat, redness, adhesions, œdema, and also of fluctuation in three of them, is to be attributed to the remoteness of the abscess from the surface, and its confinement beneath the fascia.

"*Treatment.*—The treatment of abscesses in the iliac region, laid down by surgical authorities, does not differ materially from that of abscesses situated elsewhere. Means suited to produce resolution of the inflammation and prevent suppuration are advised in the early stage. When these have failed, such means as will hasten the approach of matter to the surface, and thus afford an opportunity to evacuate it by an opening, are then to be resorted to. In this form of abscess, the first object would be very rarely attained, owing to the remoteness of the seat of inflammation from the surface, and its confinement beneath a strong and tense fascia. For the same reason, the approach of suppuration to the surface would be very tardy, and hence great danger might be apprehended from the injurious effects of long pent-up matter, such as caries of the os ilii, as was threatened in Case No. 3, where denuded bone was encountered at the bottom of the abscess; also, deep burrowing along the walls of the pelvic cavity and openings into the peritoneum, intestines, vagina, and bladder. With the view of averting these disastrous consequences, a point was sought where an opening might be early established for the escape of the suppuration. The point selected possesses the advantage of safety in respect to its anatomical relations, it being remote from the peritoneum and important blood-vessels; it affords, also, the most dependent outlet. The mode of performing the operation has been sufficiently described in the preceding narrative. No time should be lost in resorting to it; the absence of fluctuation need not deter from it. The phlegmonous character of the swelling; its anatomical relations to the iliac fossa and Poupart's ligament; the absence of disease of the lumbar vertebræ, and the coexisting retraction of the thigh; these points being clearly made out, are sufficient to warrant the conclusion that suppuration has taken place in the fossa behind the fascia.

"It is hardly necessary to add that the approved auxiliary means of abating inflammation, such as leeches, poultices, etc., together with appropriate constitutional remedies, are not to be omitted."—pp. 159–163.

Abscess of Posterior Chamber of Fascia Lumbarum. M. GUNN, M.D., Prof. of Surgery in the University of Michigan. (Medical Independent, Detroit, Oct. 1857, p. 469.)—After a description of the anatomical peculiarities of the posterior abdominal fascia, Dr. Gunn continues:—

"An abscess occurring within this sheath, will naturally present peculiarities, occasioned by the shape of the chamber, distance from the surface, and the unyielding nature of the tissue which forms its walls. These peculiarities consist mainly in the absence of those physical signs which usually indicate an abscess. Bound down by the posterior layer of the fascia, there is but little swelling—a mere fulness of the region, which, perhaps, can only be seen by comparing the two sides. Fluctuation will be very obscure in the early stages, from the depth and small amount of pus; and in the later stages, from over-distension of the sheath which constitutes the walls of the abscess. Diagnosis must be based, first, upon those constitutional symptoms which indicate the suppurative process; and second, upon physical signs, modified as above described."

Three cases, of some six weeks, seven weeks, and some months in duration, are reported, which terminated happily after the evacuation of the purulent cavities, through deep incisions in the lumbar region, about two inches from the spine and on a level with the last rib.

A New Tourniquet. S. D. Gross, M.D., Prof., &c. (North Am. Med.-Chir. Rev., Jan. 1857, p. 96.)—This instrument is a forceps-shaped compressor, resembling somewhat a pair of double calipers, opening on a central screw-pivot, with long blades of large curvature at one end and short blades of small curvature at the other, both pairs of blades being regulated by the same rachet. A double tourniquet or a pair of tourniquets is thus produced,—a large one for the thigh and a small one for the arm or for the thigh of a small person. The upper and lower blades on each side of the central screw differ also in length and curvature. The upper blades are shorter, narrower, and of a smaller curve; their extremities, being each provided with a pad which works upon a screw, dip downward so as to direct the pad upon the artery, and by means of a few turns of the screw of the pad, to press the latter firmly on the vessel. The lower blades are longer, broader, and more widely curved, being intended to maintain the counter-pressure on the outer side of the limb which the instrument is intended to grasp, while avoiding circular constriction, as in the tourniquet of Dorsey and the later instruments of Signoroni, Skey, and others.

For a better comprehension of the instrument we must refer to the wood-cut illustration which accompanies the inventor's description.

The advantages claimed for it are—first, facility of application; secondly, the amount of pressure commanded; thirdly, its ready adaptation to limbs of different sizes; fourthly, its confining the pressure and counter-pressure to the two opposite surfaces where alone it is wanted; and lastly, the ease with which it may be slackened or removed at any stage of the operation. With a slight modification it might readily be adapted to the femoral artery under Poupart's ligament, or to the external iliac just above, or to the axillary artery.

On the Ligation of Arteries. T. P. Gibbons, M.D. (North Am. Med.-Chir. Rev., Jan. 1857, p. 78.)—The object of the method proposed in this paper is to lessen the danger of secondary hemorrhage "consequent upon the application of the ligature immediately below a large collateral branch."

The peculiar plan of an operation, in which the ligature was applied midway between two collateral branches, is thus described:—"The artery was exposed in its sheath to the extent of half an inch; a grooved director was carried *obliquely* under it, and raised so as to allow the ends of the instrument to rest upon the edges of the wound; the director was then brought round at right angles to the course of the vessel, and an eyed probe, armed with a ligature, carried along the groove. The artery was tied at this point."

"The mechanism of the process is simple. When the director is carried obliquely under the vessel, as the primary step, and subsequently moved round at right angles with it, it will be observed that the position which the instrument holds beneath the artery is such as to insure the application of the ligature midway between the two nearest points of resistance; which points usually to the connection of the collateral branches. The reason for its occupying this particular position is sufficiently evident; in moving it from a branch the resistance becomes less, while in moving it toward one, the resistance is of course increased; the consequence is, that the director, when placed at right angles with and under the vessel, naturally assumes a position where the two forces act equally; that is, equidistant from the two points of resistance."

Early History of Ligature of the Common Carotid Artery, with a Report of the Unpublished Operations in the City of New York. JAMES R. WOOD, M.D., Surgeon to Bellevue Hospital, &c. (New York Jour. of Med. for July, 1857, p. 9.)—This paper is the result of a desire in its author to place on record his own experience in this operation, and to obtain, also for publication, that of the other surgeons of New York, as shown in the reports of their numerous unpublished cases; so as to present "all the attainable unpublished material of our city bearing on this operation."

After a brief sketch of the early history of ligature of the common carotid artery, in which due honor is done to the first American cases, he gives in detail nine cases of his own. These are followed by *remarks on forty-four cases of ligature of the common carotid artery*, communicated by Prof. Valentine Mott, from which we present the following extracts:—

"In the five instances in which I have tied both carotids in the same patient there has not been any secondary hemorrhage. The interval between the operations was from two months to one year. One exception to this must be made, in which, with the consent of the patient and the approbation of my colleagues, I tied the second carotid after an interval of about fifteen minutes; the case was altogether desperate and one of great suffering. A few hours after the operation, coma came on, followed by stupor, which ended in death within forty-eight hours from the operation.

"In two cases I have tied this artery at a very early age. Both were for aneurisms from anastomosis; one was in the orbit, and had passed over the bridge of the nose into the other orbit; the other was three months old, and the tumor was of an enormous size, upon the upper part of the neck, involving the angle of the jaw and temple. They both recovered.

"In two instances I have tied it upon the distal principle for aneurism of the innominata. The first was upon a counsellor-at-law in this city, about sixty years old, of a vitiated habit. About the period of the separation of the ligature, slight arterial hemorrhage showed itself, and, shortly after, the ligature came away spontaneously. A more profuse bleeding took place from time to time, and he sunk under it two or three days afterwards.

"The other case was upon a farmer from New Jersey, forty to fifty years of age, of apparently good health; the aneurismal tumor was nearly the size of my fist, with the blood all fluid.

"In this, as in the former patient, there was scarcely a discoverable pulsation in the axillary artery, none in the brachial, nor any in the radial or ulnar.

"The common carotid was, therefore, tied on the distal side of the aneurism; everything went on favorably, the ligature separated on the thirteenth day, the wound healed kindly. In six weeks he returned home, without a vestige of the tumor remaining above the sternum.

"There was no return of the aneurismal tumor above the sternum. He died about twelve months after his return home. The autopsy revealed the existence of the aneurism in the arteria innominata, which had shriveled and contracted to a hard and very compact spherical mass.

"As before stated, one of my patients died from secondary hemorrhage, a day or two after the separation of the ligature; two died before the ligatures were cast off. One of these was where the second carotid was tied after an interval of fifteen minutes; the other was the monstrous case of osteo-sarcoma of the lower jaw, (Prince's case, see *Journal of Medical Sciences*,) in which the tumor was nearly the size of his head; the bone was sawed through at the first bicuspid tooth; and the jaw removed at the temporo-maxillary articulation of the opposite side.

"He sustained the operation remarkably well, but appeared to die from the collapse which followed it on the third day.

"In all my operations upon this artery, which now amount to forty-four, only one ligature, a small and round one, has been applied to each vessel.

"*Conclusions.*—The conclusions to which I have come are the following:—

"That in malignant disease of the nares, antrum, sides of the head, posterior fauces, and orbit, ligature of the common carotid of the side affected is not only a safe, but proper operation. If the disease is not arrested by the tying of one carotid, the other ought also to be tied, as soon as the increase of the disease is in the slightest degree manifested.

"In several of each of these classes of cases I have operated myself, and have seen it done by others, and never without manifest advantages to the patient, provided a recovery from the operation has followed. It is well known that some have only lived three to five days after tying the first carotid.

"I have seen a case lately, a malignant tumor in the posterior fauces, originating, probably, from the periosteum and bodies of two or more of the cervical vertebræ, closing one side of the posterior nares, obliterating the Eustachian tubes, and impeding deglutition, which was greatly benefited by tying the carotid of that side. The tumor obviously diminished in size, and all the unpleasant symptoms were assuaged.

"When he left for home, he promised to return and have the artery on the other side tied, as soon as there was a return of his suffering.

"In the first case of this frightful affection in which the artery was tied, the tumor actually sloughed.

"In four instances of this disease, which we had previously met with, and in which the artery was not tied, they all lingered out a most painful and distressing existence.

"I have seen and known more than one year elapse before it was deemed necessary to tie the second artery. During all this time, the disease was not arrested, but atrophy was constantly going on, and upon tying this second artery, the tumor, *though malignant*, has entirely disappeared.

"Two instances of this kind I can now refer to, in which the individuals have enjoyed good health for years without a vestige of the disease remaining.

"In idiopathic epilepsy, or, that arising from a cerebral cause, I have seen only temporary benefit from tying one carotid. In one desperate case I tied the second carotid within six months of the first, with only a mitigation of the violence and frequency of the fits. He died in less than twelve months after the last operation of tubercular phthisis.

"In six cases in which I tied the common carotid, before removing large portions of the lower jaw, for huge osteo-sarcomatous disease, and three at the temporo-maxillary articulation, I have been pleased with this preliminary step. Not only is the loss of blood comparatively trifling, but the inflammatory tumefaction of the posterior fauces is decidedly less.

"When I began these operations, now thirty-six years since, I had no guide;

there was no precedent that ever came under my notice; they were original with me; my object then was the safety of my patient and the success of the operation, both of which followed in a number of my early cases.

"This step I have not deemed necessary of latter years, and would not now recommend in practice. But at that period of operative surgery I deemed it prudent and proper, and although this has been, perhaps, treated unkindly by some, they could and would not have done better than myself."—pp. 36–39.

Then come reports, from different surgeons, of some thirty-nine interesting cases, the details of many of which are given in full. We have only room for Dr. Wood's summary.

"The common carotid was ligatured for the following causes:—*Hemorrhage.*—Whole number, nine; of which six recovered and three died. *Cause of Death.*—Two became hemiplegiac; one, a few hours after the operation, dying comatose, no autopsy; the other on the second day, also dying comatose, and revealing, on *post-mortem* examination, softening of the brain and inflammation of the pleura. One died on the eleventh day, and, on examination, was found to have had pericarditis, with collections of pus in apex of lung and liver. *Malignant Disease of Head or Face.*—Whole number, seventeen, of which four resulted in the apparent cures of the original disease; ten were decidedly benefited, growth of tumor being for a time arrested; two died; one not noted. *Cause of Death.*—In one, hemiplegia supervened twenty-four hours after operation, and death occurred in sixty hours; autopsy revealed extensive softening of the brain; in the second case, death occurred three or four days after operation, from exhaustion. *Aneurism by Anastomosis.*—Whole number, ten, of which four were cured; one died; five were benefited. *Cause of Death.*—In the fatal case, phlebitis was found to have existed, pus found in cavity of deep jugular vein. *Aneurism of Branches of Carotid.*—Whole number, four; all recovered. *Epilepsy.*—Whole number, two; both benefited, but not cured. *Removal of Tumor.*—Whole number, seven; all recovered. *Secondary Hemorrhage* occurred in five instances, slightly in two, and severely in three; all recovered, the hemorrhage being controlled by pressure. *Date of Separation of Ligature* was noted in twenty-four cases,—maximum period, thirty-one days; minimum, nine days; average, fourteen days and twenty-one twenty-fourths."

Ligature of the Primitive Carotid Artery for Malignant Disease. GEORGE C. BLACKMAN, M.D., Prof. of Surgery, &c. (Western Lancet for Sept. 1857, p. 627.)—Dr. Blackman refers to seventeen cases, reported in the preceding paper of Dr. Wood, in which this operation was performed for malignant disease of the head and face, and recommends the operation as decidedly advantageous, according to his own experience.

These views are illustrated by the history of four cases, the first of which was published in the *Am. Jour. of Medical Sciences* for October, 1845. The effect upon the tumor in this instance was remarkable; but the patient died on the eighth day after the operation.

In the second case, a farmer's son, aged eighteen, the right primitive carotid was ligated. The ligature came away on the thirteenth day, and the whole wound was soon healed. The immediate effect, in arresting the growth of the diseased mass and in diminishing the tumefaction of the cheek, was most decided. A fungous growth soon appeared beneath the upper lip and rapidly increased. To arrest the growth of this, and to render the decay of the mass within the maxillary sinus more certain, the left primitive artery was tied on the twenty-first day after the former operation.

When the first knot was made, vision in the left eye was immediately lost. Some minutes elapsed before he ventured to apply the second; but as the sight became partially restored, the operation was completed. Not an unpleasant symptom was observed. Ligatures came away on the fourteenth day. In less than a week from the last operation the protruding growths had sloughed and separated. When last seen by Dr. Blackman, seven years after the operation, this patient was relieved of his disease and enjoying perfect health.

The third case was one of a cachectic lad, aged fourteen, very liable to excessive hemorrhage; with great tumefaction of the cheeks, right eye-ball protruding, and the right nares almost plugged up.

The primitive carotid artery was tied. Vomiting for awhile after the operation; some fulness of the head; some little fever; hemiplegia. Ligature came away on the eleventh day. In about four weeks the lad left the hospital very much improved; has not been heard from since July, 1857.

Case fourth was one of malignant disease of one-half of the brain, in a boy of seven years. There was a pulsating tumor protruding through the right side of the frontal bone, and the aneurismal bruit was unusually distinct. The first indication of the disease appeared about eighteen months before, and for six months the enlargement of the skull had been gradual and unaccompanied by pain. In August, 1856, he had a chill and convulsions which lasted an hour and a half. Next day he had five, very violent. From this date the tumor increased rapidly and the frontal pain was excruciating. Convulsions became frequent and threatening to life. Ligature of the common carotid was resorted to as offering the only chance for the patient. Convulsions set in again in twenty-four hours, and death followed in thirty-six hours.

Femoral Aneurism cured by Veratrum Viride, Manipulation, and Compression. GEO. C. BLACKMAN, M.D., Professor of Surgery, etc. etc. (Western Lancet, June, 1857, p. 407.)

"John Austin, aged twenty-eight, a native of England, entered the Commercial Hospital on the 7th of April. Four months previously, he felt a sharp pain along the course of the femoral artery, at the junction of the lower and middle third of the thigh, and for the first time he observed a pulsation in this region. He had worked for many years as a file-cutter, and had been accustomed to use a small anvil, which was held between his thighs. A swelling was soon detected, and this continued to increase until the time of his admission. There was a space of about three inches between the upper margin of the tumor and Poupart's ligament, and measured along the axis of the limb, the swelling was five inches at its base. The aneurismal bruit was very distinct, and the pulsations perceptible across the amphitheatre. Compression at the groin caused the tumor to diminish considerably in size, and it would immediately regain its former dimensions when the pressure was removed. The patient complained of numbness and other painful sensations in the knee, leg, and foot. As the tumor was daily increasing, and as there was no other indication of disease of the arterial system, I determined to bring the patient under the influence of veratrum viride, in order to subdue the force of the circulation. From the time of his admission he was kept on a low diet, and cathartics were administered. On the 11th I ordered six drops of the tincture every three hours. On the morning of the 12th I found that the pulse had been reduced in frequency from 94 to 65. At ten o'clock A.M. of this day he was brought before the class, when with my thumb I pressed forcibly into the aneurismal sac, for the purpose of dislodging a portion of its fibrinous layers, hoping thus partially to obstruct the artery, and to favor the further deposition of fibrin in the sac. Skey's tourniquet was now applied with moderate force between the tumor and Poupart's ligament. The progress of the case may be learned from the following record, kept by Dr. N. J. Sawyier, the house-surgeon:—

"'At 12 A.M., his pulse being 110, full, strong, and bounding, he was bled ℥ix. Pulse came down to 50, soft and regular, and continued low for several days. (The following are extracts from the Case-Book:)

"'April 13th, A.M. Suffers no pain nor uneasiness at all; slept well last night. Entire limb diminishing rapidly in size. Kept the apparatus tight. General health good; whenever any untoward symptom arose, it was promptly met, and the patient kept in a good condition. At intervals the shooting pain was felt in the tumor, but it gradually subsided altogether.

"'April 17th. Professor Blackman ordered the tourniquet to be taken off, the bandage re-applied from the toes up over the tumor, upon which it was to be tightly wrapped, and the patient to be bled, after which the following was administered:—

℞.—Antimon. and Potass. Tart. gr. $\frac{1}{4}$,
Pulv. Opii. - - - - - gr. $\frac{1}{8}$,

Sig. Take every three hours. Patient's pulse came down to 65, soft and regular.

"'April 19th. *Souffle* ceased entirely, but the pulsation continues, though it is very weak.

"'April 22d. Pulsation in tumor has ceased altogether.

"'April 25th. Is in fine spirits; has no pain, and wants to walk about. General health very good.

"'April 30th. Has walked some steps, and complains of nothing but weakness.

"'May 21st. The pulsation in the tumor has never returned. The femoral is firmly plugged as far as the origin of the profunda, and in the popliteal space the pulsation of the artery is hardly perceptible. The tumor is daily decreasing in size, and the patient is anxious to leave the hospital and resume his business.'

"We need not add that to Mr. Fergusson, of King's College Hospital, London, is due the credit of suggesting and practicing manipulation in the treatment of aneurism, more especially at the root of the neck, where the ligature could not be applied. The combination of treatment adopted in our case, we believe, has never before been attempted, and although its value cannot be established by a single instance, we predict that it will meet with the approbation of all who are acquainted with the pathology of this affection."

Popliteal Aneurism cured by Compression. Drs. F. MITCHELL and JOHN W. BOND, of Mansfield, Ohio. (Trans. of the Ohio Medical Society, June 3, 1856.)— J. P., aged twenty-eight, presented a tumor of one year's growth, in the left ham, about four inches in diameter, very nearly spherical, and pulsating over its entire surface simultaneously with the arterial pulse. Compression was commenced July 25th, 1854. The foot and leg were bandaged up to the tumor; one clamp tourniquet and one ring tourniquet were then applied over the femoral; these were alternately relaxed and tightened, and their position shifted along the course of the artery. In a short time, however, another clamp was substituted for the ring. The patient, an intelligent man, was allowed to regulate for himself, in a great degree, the amount of pressure. For the first ten days compression was applied from twelve to fourteen hours in the twenty-four.

Some pain was felt during this time, but not enough to disturb the patient. His sleep was sound and refreshing; the tourniquet, however, being always first removed. The tumor had now become decidedly firmer, smaller, and the sac could no longer be emptied; œdema also was fast disappearing. For the next three weeks pressure was applied from sixteen to eighteen hours per diem; the sac becoming gradually firmer and pulsation less distinct.

Two small arteries, running longitudinally over the back of the tumor, could now be easily detected. For the next six days pressure was continued about twenty hours in the twenty-four, and for the last five days it was applied continuously. At this time all pulsation in the sac suddenly ceased; diminution in size continuing to take place. Compression was now continued for a few days longer, when exercise was allowed him, the collateral vessels becoming, at the same time, enlarged; six weeks, precisely, being occupied from the time pressure was begun until all pulsation ceased. At no time was the circulation through the artery entirely checked. The pain was never severe; the pressure along the course of the vessel being so alternated as to secure to the patient the greatest amount of ease possible. No redness or excoriation of skin at any time existed. Two years have elapsed since his dismissal, and he continues perfectly restored.

Case of Popliteal Aneurism treated by Compression. T. P. GIBBONS, M.D., of Philadelphia. (N. A. Med.-Chir. Rev., March, 1857, p. 281.)—The aneurism, in this case, was of the size of an orange, of only two weeks' standing, and in a man injured in health by intemperance and "Chagres Fever." It was painful, and accompanied by a swollen limb. Ossification of the radial artery and dilatation of the heart were discovered; and compression was therefore determined on in preference to ligature.

The limb was bandaged from the toes upward, a warm anodyne application made to the part, and compression begun on March 1st, about three weeks after the first appearance of the tumor. Skey's tourniquet was applied to the femoral artery at the inferior angle of Scarpa's triangle, pressure being changed to different points, according to the tolerance. The pressure was continued, at two or three hours' intervals, for twenty-six hours, when the instrument was removed on account of the great tumefaction of the limb. The pain, already severe, became excruciating after the removal of the instrument. Four grains of morphia were given, with only partial relief. On the third day delirium tremens supervened, and put a temporary stop to the compression. Treated at first with brandy, and subsequently with wine of opium enemata, and carbonate of ammonia, with porter as a diet-drink.

On the sixth day, at one o'clock P.M., the limb was bandaged, and a new instrument was adjusted. This instrument is thus described:—

"A piece of sheet-iron, curved to fit the posterior surface of the thigh, and well cushioned, forms the base of the instrument. To this three clamp tourniquets are attached by their inferior extremities. The shaft of each tourniquet is provided with a slide, so that it can be lengthened or shortened at pleasure, and fixed at any point by means of a thumb-screw. When the instrument is in place, the pads of the three tourniquets rest immediately over the femoral artery, and by turning the screw of any one of them, the vessel is compressed against the femur. But one tourniquet is intended to be used at a time, and when the pressure exerted by this becomes too painful to be borne, either one of the others may be screwed down before relaxing the one last employed. The tourniquet pads are purposely made small, to avoid pressure upon the femoral vein, if possible."

We cannot pursue the case in detail. In the course of five days the patient became able to wear the bandage constantly, and to support the compression from four to eight hours a day. The tumor then began to harden, the pulsation to lessen in force, and the general health to improve. From this time the tumor diminished from day to day, although the pressure was not kept up longer than eight hours out of the twenty-four; and upon some days was not submitted to at all.

After a slight relapse, owing to his wilful neglect of treatment, and indulgence in exercise about the house for a week, he was prevailed upon to go to bed again and reapply the compressor. It was then worn steadily for seventy-two hours; at the end of which time, upon removing it, the pulsation was found to have entirely ceased, and did not reappear. In two weeks from this date he was able to walk, with a crutch and stick, about a quarter of a mile, to his place of business, and to occupy himself at his employment, which allowed him to sit with his limb elevated. Improvement gradually went on until, with the exception of a little thickening of the tissues within the popliteal space, not the slightest trace of the original tumor could be detected.

Traumatic Femoral Aneurism. Ligature of External Iliac Artery. Fatal Result. FRANK A. HAMILTON, M.D., Buffalo. (Buffalo Medical Journ. for Jan. 1857, p. 466.)—A lad, aged fourteen, accidentally stabbed himself with the large blade of a pocket-knife, in his left thigh, penetrating to the depth of about an inch and a half, at a point one inch below Poupart's ligament, and over the course of the femoral artery. Profuse hemorrhage immediately occurred, but ceased in two minutes, almost as suddenly as it had commenced. The boy fainted at once, and did not revive for half an hour. There was no return of the bleeding; nor was there any pulsation until some hours had elapsed, it being first noticed "on the second, third, perhaps as early as sometime during the first day."

"This occurred on Monday, July 28th. Tuesday a chair was placed by the side of his bed, and he was helped into it while his bed was being made up. The same was done, probably, on Wednesday. Thursday, with the aid of crutches, he walked into the adjoining room. Friday, Saturday, and Sunday he walked about these two rooms. Monday he walked to the horse-barn. Tuesday and Wednesday he was more quiet.

"I am not informed that he was seen by any physician during all this time, except as mentioned on the first day. The distance at which Dr. Saunders lived, and the absence of any lively apprehension of danger, led to this neglect; yet it is not supposed that any more active interference, even at this early period, could have prevented the final result. It is remarkable, however, considering that the artery had been completely severed, and considering that the wound of the skin, half an inch in breadth, had so recently closed—it is certainly remarkable that with all these circumstances existing, and with his daily exercise, it did not give way, and in a moment terminate his life. But this is scarcely less remarkable than that it should ever have ceased to bleed spontaneously, or with such apparently insufficient means [pressure with the fingers, cold water, and rest on his back,] as were at first employed by the terrified assistants.

"On Wednesday, August 6th, ten days after the accident, a compress was, for the first time, applied. On Thursday, a messenger having been sent to me for advice, Charrière's compressor was substituted, but proving very painful, the simple compress, with a bandage, was, after a few hours, again employed; and this was continued until Saturday, August 9th, the thirteenth day after the accident, when I first saw him. He was at this time exceedingly pale, with a soft, feeble pulse. The aneurism, then of about the size of a hickory-nut, could be distinctly seen pulsating as he lay upon his back. Pressing my finger upon it, the blood seemed to be near the surface. Continuing the pressure, the sac became emptied, and on removal of the finger it was not immediately refilled. The aneurismal thrill, or vibration, was very intense in the tumor, and continued downward, along the line of the artery, about four inches; and upward as far as the pulsations of the artery could be felt underneath Poupart's ligament.

"I determined, at once, to make another attempt to close the aneurism by pressure; and as the space above, to which the instrument could be effectually applied, was only about one inch, and as it was evident that the aneurism could be emptied by direct pressure, I concluded, at first, to place the pad of the instrument over the aneurism and not above it. Accordingly, this was done, and I left him again in charge of Dr. Saunders.

"A few days after it was found that the cicatrix, over the aneurism, was beginning to ulcerate, from the constant pressure; and as no improvement had taken place in the condition of the aneurism, at my request the instrument was removed to a point directly over the pubis. Soon the pain from the pressure here became insupportable, and, at my instance again, on the 30th of August, leaden weights were substituted for the compressor.

"The directions were always that the pressure should be such as to diminish the current of blood in the artery, but not to arrest it. They were to apply sufficient to prevent the 'thrill.' The direction and exact point of pressure were also to be as much varied as the circumstances of the case would permit.

"The leaden weights were made fast in a belt, which was secured around the hips. They were conical, and varied in size and in weight. During most of the time he was able to sustain seven and a half pounds without much inconvenience. Indeed, this was found to be a much less painful mode of pressure than the compressor, even when the amount of pressure, as determined by its effect upon the aneurism, was precisely the same. He was especially relieved by the removal of the pressure made by the posterior pad of the compressor. He was able to turn partly upon either side while wearing the weights.

"Sept. 19th. After six weeks of continued pressure, I found the aneurismal tumor and the thrill as when I first saw it. The lad was becoming gradually more feeble, and his left limb œdematous. It was apparent that pressure could not accomplish the cure; accordingly, assisted by Dr. Saunders and his brother, with Messrs. Mason and Flint, I proceeded to tie the external iliac artery. We gave the patient chloroform; and having opened underneath the peritoneum, by a long incision above and parallel to Poupart's ligament, I exposed the artery one inch above the root of the internal epigastric artery, and secured it with a strong ligature. The pulsation in the artery below immediately ceased.

"When the effects of the chloroform had disappeared, George began first to complain that he had no leg, that we had cut it off, etc., indicating that he had no sensibility in the limb. Soon he said it felt like a log, it was so heavy; and within half an hour he began to speak of pain in his knee and in his shins, etc. From this time forward these pains became more and more intense, until the limb was amputated.

"In a few days white spots were seen on his shins, and his toes began to grow purple and black. The blackness gradually extended up the limb—the most part of his foot becoming dry and shrunken. The death gradually extended to the knee. As early as the fifth day after the ligature was applied, a slight thrill was discovered in the aneurism again, and this continued without change until the time of death. There was, however, no pulsation.

"On the 16th of October I amputated his thigh a little above its middle. The bleeding was inconsiderable, and the flaps looked tolerably well. He submitted to this operation, also, while under the influence of chloroform, and afterward rallied as before. Subsequently, however, on the second or third day, he began to sink, and died on the fifth day, and thus at last he was released from his sufferings.

"From the time of the receipt of the injury he lived twelve weeks and one day."

The report of this interesting case is completed with a wood-cut, representing the wounded artery, with its aneurismal sac and adjacent vein, as prepared by Dr. Charles Ap A. Bowen, of Buffalo, who furnished the drawing, and accompanied it with a detailed description of the parts, as carefully dissected by himself.

Case of Ligature of the Common Iliac Artery, for Aneurism of the External Iliac. Death. W. H. VAN BUREN, M.D., Prof. Anat. University of N. Y., Surgeon of N. Y. Hospital, etc. etc. (N. Y. Journ. of Med., Jan. 1857, p. 57.)—The subject of this case, a professional gentleman, aged forty-six, unmarried, of irregular, intemperate habits, and obese in person, first consulted Dr. V. B. in May, 1853. He had noticed a tumor, then about the size of a hickory-nut, in the fold of the groin, over the course of the main artery, immediately below Poupart's ligament. The disease appeared to be spontaneous in origin.

"The tumor was now about the size of an ordinary child's head at birth, somewhat flattened upon its surface, occupying the fold of the groin, and extending upward along the course of the external iliac artery, beneath Poupart's ligament, the position of which was marked by a depressed line dividing the convex surface of the tumor into two equal halves. Its bulk was diminished very considerably by pressing the external iliac artery against the brim of the pelvis, and its pulsations were entirely checked by the pressure. The patient's abdomen was very fat, and continued pressure caused so much pain that I could not satisfy myself that the contents of the tumor were entirely fluid; but, from its rapid diminution, and also from its well-marked expansive pulsations, I concluded that it contained but a small proportion of coagulum.

"He was urged to submit to an operation, but hesitated and procrastinated until the latter part of November, six months longer, during which time the tumor had considerably more than doubled in dimensions. His aneurism had increased to a fearful size; it was still pulsating furiously, and its contents, as far as I could judge, were yet mainly fluid. Upon the most prominent part of its surface (above Poupart's ligament, where the great bulk of the tumor now lay) was a dark-colored eschar, larger than a half-dollar, and the remainder of its surface presented a dusky, livid hue. The limb below was swelled to double its natural size. His pain was constant, and, at times, very severe."

The ligature of the main arterial trunk supplying the tumor was determined on, and performed while the patient was under the influence of chloroform. The preliminary steps of the operation were somewhat embarrassed by the corpulence of the patient, but the vessel was soon reached, and carefully exposed for the space of three-fourths of an inch; and being recognized to be healthy, a ligature was readily thrown around it and tied, just half an inch above the bifurcation into internal and external iliacs, with the result of at once arresting all pulsation in the tumor.

The operation, on the whole, was well borne; the shock was slight, and reaction immediate and favorable. The temperature of the limb was, for a few hours, lower than that of the other, but afterward did not vary from that of the rest of the body. The patient did well until the close of the second day, when he had a chill, succeeded by fever; and the tumor, then reduced to one-third of its former size, became exceedingly tender and painful. These symptoms continued to increase, and the strength to decline, until death ensued at the close of the fourth day.

Post-mortem examination the next day.—The tumor and surrounding parts were found to be the seat of inflammation, which had resulted in suppuration. It contained recent coagula, with some layers, slight in thickness, of older date, and involved the external iliac to within an inch of its bifurcation. Wound had united throughout, except in the track of the ligature. There was no peritonitis; death having resulted from the irritative fever, which accompanied the suppurative inflammation in and around the aneurismal sac. On laying open the arteries in the vicinity of the ligature, a firm, conical coagulum was found, both above and below the place of deligation; the latter clot being more than half an inch in length and bifurcated—one portion being prolonged into the internal and the other into the external iliac arteries.

Aneurism of the Crural Artery. Ligature of External Iliac. H. DARET, M.D.P. (N. O. Med. and Surg. Journ., vol. xiii. No. 4, p. 471.)—Felix L., of New Orleans, about eighty-six years of age, enjoying ordinarily good health, of a nervous temperament, presented an aneurism of the femoral artery, extending from the crural ring to three fingers' breadth below. Several means, and among others compression, were tried, without success.

The external iliac was deligated, June 19th, 1842, by the "process of M. Velpeau," at the passage of the artery upon the internal edge of the psoas; no anæsthetic was employed or needed, and but little blood was lost. No unusual symptom or accident occurred until on the 23d, four days after the operation, when "there passed by the course of the ligature quite a large quantity of blood." "This only ceased on the 27th, under the influence of styptics internally, and the constant application of ice to the wound." It was supposed to arise from an untied and open branch of the tegumentary artery. "From this date, the state of the patient left nothing to be desired." Ligature did not come away until forty-five days after the operation, very slight traction only having been made, and this only in the last days of the period. Patient began to walk on the eighteenth day. There remained only a small hard knot in the place of the aneurism. His health continued good until 1846, when he began to experience, at long intervals, attacks of nervous disorder, which augmented in intensity, and assumed the form of a species of angina pectoris, and becoming more frequent toward the end of 1848, finally terminated in sudden death, about six years after the ligature of the external iliac.

Aneurism of the Crural Artery. Ligature. DR. MERCIER. Reported by DR. M. ESCOUBAS. (N. O. Med. and Surg. Journ., vol. xiii. No. 4, p. 472.)—Louis F., aged forty-six, of a constitution a little shattered, and of a scrofulo-nervous temperament; affected with varicose veins and fibrous rheumatism in the pelvic members, with his neck marked with mucous cicatrices of old lymphatic suppurations; presented August 26th, 1856, an aneurismal tumor as large as a full-grown fœtal head, on the superior part of the middle-third of the right thigh. It had been first perceived about fifteen months previously, being then "of the size of a small hen's-egg."

A ligature of three threads was applied by Dr. Mercier, September 2d, with a modification of Deschamp's needle, to the femoral artery, about an inch and a half below the profunda. The pulsation of the tumor was entirely checked: no blood was lost. The patient was subjected to the influence of chloroform during the performance of the operation, and bore it well. The entire member was enveloped in warm sand. The temperature of the limb was 'satisfactory' on the second day; no unfavorable symptoms presented; dressing changed on the sixth; union of edges of wound complete, except at the outlet from the ligature; the ligature came away without effort or hemorrhage on the nineteenth day. November 24th. Patient has resumed his ordinary occupation of a knife-grinder, improved in general health, and released from the weight, and pain, and other inconveniences of his aneurism, the tumor having been reduced to the size of an ordinary orange.

Aneurism of Femoral Artery. Ligature of External Iliac. Reported by DR. A. MERCIER. (Ibid. p. 483.)—Michael Moran, aged thirty, native of Ireland, resident fourteen years in New Orleans, of good health, and rather strong constitution; was injured about eighteen months previously, while employed in a hardware store, by letting fall upon his right groin a box, which he was attempting to raise, weighing nearly one hundred and fifty pounds. It was only some days later that he perceived that a tumor, of the size of a hazel-nut, existed in the abdomino-crural fold. The subsequent history of his case, and a very complete and lucid description of the physical characteristics observed in the tumor and the neighboring regions, are given by Dr. A. Mercier. After suffering for several months, and persevering in the use of a bandage to the limb, with occasional rest in his room and soothing applications to the tumor, he entered the Charity Hospital. Here compression with the double-cushioned tourniquet was tried, but could not be endured, on account of the agonizing pain. After remaining ten weeks in this hospital, he put himself under the care of Dr. Mercier.

"Convinced that, in the actual state of things, compression would be completely useless, and that the time was not far distant when the sanguineous stream would open an issue through the walls of the cyst, he believed that the only means of cure which remained consisted in the ligature of the external iliac. The patient upon whom it would be practiced was a young man of good constitution, an old client of Dr. Mercier, in whom he had the greatest confidence; he was firmly determined, and he demanded, with importunity, that as early a day as possible should be fixed for the operation."

It was performed on the 9th of September, the patient being under the influence of chloroform. The vessel was of the ordinary calibre and perfectly healthy; the pulsation was immediately checked; the temperature of the limb was not affected; no pain was complained of except at the incision. The only symptoms deserving attention were those of incipient peritonitis. The limb preserved its temperature and sensibility unabated, but was relieved from the pain which had affected it throughout, and especially at the knees, before the operation. The ligature came away near the end of the thirteenth day, leaving the patient in a perfectly satisfactory state of health. On the 29th, the twentieth day, he was out of bed, with the wound nearly closed; and found himself strong enough to resume his ordinary work, the wound being healed, on the first day of November, just twenty-three days after the date of the operation.

Tetanus, after Operation for Necrosis, Cured. DR. J. J. CHISHOLM. (Charleston Med. Journ. and Rev., vol. xii. No. 5.)—A slave, aged twenty-three, "stout and in good health," except a necrosis, two years old, of the inferior and anterior face of the femur. This anterior necrosed portion of the femur was removed May 23, 1857, with the gouge, through a free incision in front of the thigh. Four fluidounces of chloroform had to be administered before anæsthesia was induced; cold water dressing was the only application, except the pledgets of lint which were employed to prevent the wound from closing over the denuded surface.

The patient would walk about the hospital, when not closely watched, a few days after the operation; and on the fifteenth day he took a long walk under an intensely hot sun. The next morning soreness of the throat and uneasiness in swallowing appeared, and continued five days; on the sixth day Dr. C. "found the jaw very much contracted; not opened more than one-quarter of an inch; and during the visit he had a severe cramp, accompanied with opisthotonos. He complained of severe pain in the throat and difficulty of swallowing, the face presenting the peculiar and striking expression so characteristic of tetanus."

Patient to be kept quiet in a dark room; nourishment and stimulus ad libitum; thirty drops of laudanum to allay pain, and a fluidrachm of laudanum at bedtime. The patient was found to be worse on the second day of treatment; paroxysms violent and very frequent; pain in the throat and sense of suffocating, almost entirely disabling him from taking food or drink. An inhalation of chloroform was prescribed, which removed this disagreeable symptom, and enabled him, during the visit, to drink nearly one pint of porter. "Chloroform to be inhaled before taking food; nourishment and stimulus to be urged."

The further treatment was not detailed. It was based on the belief of the narrator "that tetanus destroys its victims chiefly by exhaustion; and if by the administration of stimulus and easily digested and nutritious food, the patient can be kept alive a certain number of days, the irritability of the nervous system will wear itself out, and the patient will be saved."

"The treatment, instituted and continued with very little change, consisted in inhaling chloroform when the spasms of the throat were so severe that the patient could not swallow. This inhalation was never carried to insensibility, or even to drowsiness, and was only required on three or four occasions; from thirty to sixty drops of laudanum were administered at bedtime, which generally gave him a good night's rest. After a few days the laudanum nauseated him, and he vomited frequently. This was then changed for morphine, half a grain every night at bedtime; hot poultices to the abdomen, when very hard and painful; two drops of croton oil every fourth day, to open the bowels—for they were never opened naturally for three weeks—until the paroxysms had very much mitigated; last, not least, strong plain nourishment, even to forcing; porter I considered peculiarly applicable for the anodyne effect, as well as its sustaining powers. This was used without limit. I was always most satisfied when the patient had taken his four bottles in the day, for he was sure to have a good night after such copious potations."

The paroxysms gradually lessened in severity and frequency, until they finally left him; occasionally, however, the paroxysm was a violent one during this improving period; and even a month after the outset of the attack, when he was well enough to walk about, he had one, while standing on the floor, which threw him on his back.

Dr. C. states that in the last three years he has successfully treated three cases of tetanus; and he attributes his good fortune to the course of treatment, above described, which was adopted in each case.

A Lecture on Traumatic Tetanus, with Notes of Cases. HENRY F. CAMPBELL, M.D., Prof. of Surg. Anat., etc. (Southern Med. and Surg. Journal, Feb. 1857, p. 75.)—We are able only to quote the conclusion of this clinical lecture, which presents a practical review of the cases:—

"You will observe that in all three of our cases, the tetanic state was preceded by a wound; that in Case 3d, the ordinary stimulus of light produced a fixed contraction in the motor muscles of the eye, causing strabismus; afterwards on turning the face to the light, twitching of the facial muscles occurred, and on touching lightly the cheek, violent jactitations in the muscles of the neck ushered in the characteristic opisthotonos; while in Case 2d, on carefully raising the affected hand to examine the cicatrix, the patient was so violently convulsed that he fell from the chair upon the ground. The presence of the urine causes spasmodic stricture at the neck of the bladder, while in all these instances the authority of the will is ignored, and a universal automatism holds empire over the muscular system. How is this brought about? you ask. The wound *probably* excites, and in some manner permanently exalts, this excito-motory function of the nerves, but in *what* way, we cannot at present safely answer.

"As to treatment, I think we may safely say that our cases seem to favor the opinion, that in the early stages of tetanus, sedatives and revulsives are beneficial, while in the latter stages, stimulants should claim the first place. Chloroform, in heavy doses, will produce, in our opinion, all the sedation we could desire from any one remedy, while in the latter stages, we can still recommend it, but in smaller doses, or in the manner in which it was applied in Case 3d; viz., in combination with another anæsthetic of a more stimulating character. We have great reliance on this combination.

"In regard to revulsives, the idea just now occurs to me, more from a consideration of the nature of the disease than legitimately from a review of the above cases, that I would not recommend you to apply them as a prominent part of the treatment, for I think they are more calculated to enhance and exalt peripheral excitability without materially improving the condition of the disordered nervous centres. Although we have generally applied them freely, I must confess that I cannot recollect, at present, any instance wherein marked benefit has accrued from their use, and sometimes I have seen decided injury follow their application.

"There are many other ways of viewing the pathology of this disease, scattered everywhere throughout the books and throughout the journals, and also many other modes of treatment. Amputation of the entire part, or a section of the nerve, are both rational, the last especially, and should be *considered*, in every case of the disease; Indian hemp (*canabis indica*) has, it is said, done much in many cases; and Dr. R. B. Todd recommends a long bag of ice to the spine. I would probably use one or all of these remedies in certain cases, but at present, and from the few cases I have had the opportunity of comparing, I would never allow chloroform or brandy to be excluded, except under very peculiar circumstances, from the medication."

Case of Exostosis occupying the Orbit and Nasal Cavity, successfully removed, and Vision restored. ALEXANDER B. MOTT, M.D., etc. etc. (Am. Journ. Med. Sci., Jan. 1857, p. 35.)

In this case Dr. Mott diagnosticated exostosis occupying the left nasal cavity and orbital foramen. The extent of the growth of bone could not be felt, but, from the duration of the malady he inferred that it penetrated far into the socket, and was firmly attached to the orbital plates.

"The patient, William Hoy, aged thirty-three, a native of Edinburgh, Scotland, and a wood-turner by trade, had, about seven years previous to his applying to me for advice, noticed an enlargement toward the inner canthus of the left eye. His previous health had been good, though he had been subject to headache, and his attention was first drawn to the seat of disease by inflammation around the part, and a troublesome flow of tears over the cheek. About eighteen months after he first noticed the tumor, the left nostril was closed up, and he then applied for relief to a surgeon of Edinburgh, who passed a probe up that cavity; but the only effect of this was to excite great pain in the head and produce an extensive swelling on the side of the face. Professor Syme next examined it, but proposed no operation. At this time the tumor did not occupy the socket of the eye; but it gradually increased in size, pressing that organ to the outer canthus, and impairing its vision. Nothing, however, appears to have been done; and in this condition he progressively went on from bad to worse until, having in the interval emigrated to this country, he applied for my advice and assistance in the month of April, 1854. About two months previously, a discharge of bloody matter had taken place from the left nostril, and continued to a considerable extent night and day subsequently. The pain in the head had also become very violent, and prevented him from attending to his work. About a month after the discharge from the nostril the eyelids became swollen, and an abscess formed under the lower lid, toward the inner canthus. On passing a probe through this opening, the bone could be distinctly felt, and its existence in the nostril was also equally evident."

An operation having been determined on, it was performed on the 22d of April, in the following manner:—

"The patient, being placed on a bed, was brought under the influence of a mixture consisting of equal portions of chloroform and sulphuric ether, which, in such cases, I recommend. I then made an incision from the ala of the nose in a direct line upward to about half an inch above the superciliary ridge, and afterward a transverse one from the centre of the upper eyelid across the nasal bone to the opposite eyelid, terminating in a line with the inner canthus of the right eye. The four flaps thus made were next dissected up, beginning at the points where the incisions intersected each other, and carefully extending through all the tissues to the bone. Upon raising the flap nearest the nose, it was evident that a large portion of the osseous mass extended into the nasal cavity, and it consequently became necessary to remove the whole of the fleshy portion of the nose from the nasal bone of the left side. This being accomplished, I dissected the opposite flap clear from the tumor, keeping as close as possible to the bone in order to avoid wounding the eyeball or its surrounding tissues and their attachments. This, too, being done, I found the bony tumor was firmly impacted in the orbit and nasal cavity. I consequently separated the nasal bone of the left side from its fellow of the opposite, by means of a strong pair of Liston's bone-forceps, and with a fine straight flexible saw detached it from its frontal attachment. By a little manipulation I was thus enabled to remove the portion represented in Pl. I., Fig. 3, [*vide Am. Journ. of Med. Sciences,* Jan., 1857, p. 40]; and on accomplishing this, I next, by means of a delicate chisel and hammer, gradually detached the other bony mass represented in Pl. I., Fig. 4, [*v. ibid.*] from the orbital plate of the frontal bone, and also from the orbital plate of the superior maxillary. The os unguis was so thoroughly incorporated with the tumor that I was obliged to remove it along with the mass; and the whole being now somewhat movable, I made a slight traction by means of a pair of strong forceps. A few more cuts of the chisel enabled me to withdraw it; and, to my own great satisfaction, as well as the astonishment of all present, I discovered that the orbital plates had not been injured. Had these been so, I need not say the result would have been most serious: the brain would have been exposed, and it would have been almost impossible to have avoided a fatal issue. But this danger was happily evaded, and all now went on comparatively easy. On removal of the tumor from the orbit, a slight discharge of pus took place; accounting in some degree for the pain previously experienced in that cavity.

"The next important point which presented itself for my consideration was the restoration of the eye to its natural and original position. From attempting this I was dissuaded by some of the professional gentlemen around me, from whom I had derived valuable assistance during the operation. They recommended that the cavity should be filled in with lint; but, desirous of doing all in my power for the benefit of the patient, and seeing no reason why the eye should not be replaced—considering, also, that there was every probability of the coverings adhering, there being two raw surfaces to be brought in contact—I replaced the organ, and drew the edges of the wound together by means of interrupted sutures and adhesive straps. A bandage was next passed around the head, containing a small compress which was placed over the eyeball. The latter was thus retained in its natural cavity; my object being to fill up the orbital foramen, and have union by the first intention.

"Secondary to the recovery of the patient from so formidable and dangerous an operation, the most gratifying result in this case is the fact that the eye, which had for several years been gradually but completely pressed out of its regular position, was eventually replaced; and that the vision, which had been totally lost for several years, was perfectly restored. So soon as he was able to sit up—that is, about sixteen days after the operation—the patient called my attention to his eye, which appeared to move naturally, and to his astonishment he found that he could distinguish objects, although not very distinctly. His sight continued to improve, as well as his general health; and in about a month he was able to leave the hospital entirely cured.

"From time to time I have seen him since, and observed with pleasure the gradual improvement in his vision. In less than three months after the operation, the sight was as good in the eye operated upon as it was in the other, and his personal appearance was much improved. The eyeball had resumed its natural position, and, when I last saw him, the scar on the face was scarcely perceptible."

Cases of Resection of the Superior and of the Inferior Maxilla. W. H. MUSSEY, M.D., Cincinnati. (Cincinnati Med. Observer, Dec. 1857, p. 544.)—Dr. Mussey reports two cases of resection of the upper jaw-bone and one of the lower.

CASE I., April 24, 1856.—Mrs. C., aged fifty, a gradual enlargement of the left cheek, perceived during four months previously.

"The development involves the maxillary and malar bones; in the position of the latter, and below it, is a large projection with an inflamed surface, and fluctuation can be distinctly felt in the lower half of it. There is no projection into the cavity of the mouth. Believing in the malignant character of the disease, I advised the removal, as likely to prolong life; and proceeded to operate by making an incision from a point on a level with, and an inch posterior to the fronto-malar suture, terminating in the angle of the mouth; and dividing the zygoma of the temporal bone a third of an inch from the temporo-malar suture, separating the fronto-malar suture, cutting the nasal process, and detaching the maxilla from its fellow.

"The orbital ridge and floor were completely softened, and the 'fluctuation' proved to be the result of the softening of a portion of the substance of the tumor, which was encephalomatous. The disease was not confined to the maxillary and malar bones, but seemed to have invaded the deep-seated tissues posteriorly, so as to lead me to expect the return of the disease.

"The hemorrhage was abundant, though not seriously so; and the patient recovered rapidly, remaining well up to last February, since which I have heard nothing from her."

CASE II., August 19th, 1857.—Mr. S., aged fifty-one, discovered some evidence of organic disease on the left side of his mouth, about four months previously.

"At this time there is an ulcerated surface, including a portion of the covering of the hard palate, two and a half by one and a half inches. Externally there is an enlargement of the cheek, anterior to and below the malar bone.

"Regarding the affection as of a cancerous character, I proceeded to remove the superior maxilla of that side, and commenced the division of the soft parts over the zygomatic arch, terminating in the angle of the mouth. The malar bone was sawed through its centre according to the suggestion of Dr. R. D. Mussey, (*vide Transactions Am. Med. Association*, vol. iii., p. 364,) and the soft palate was separated from the border of the hard palate, leaving it otherwise intact.

"A mass of encephaloid disease, filling the antrum, had invaded the osseous structure anteriorly and posteriorly; and inferiorly and externally some of the soft parts required removal. The external wound healed readily; but internally, after four weeks, a small fungus sprouted from the inferior angle of the wound, which was subdued by the liberal application of powdered sulphate of zinc. There followed slight exfoliation of the malar bone, which was removed eight weeks after the operation."

Dr. Mussey apprehended a return of the disease, although the patient reported himself to be doing well, November 13th.

CASE III.—Miss S., aged eighteen, eight weeks previously had "felt trouble from a tooth in the lower jaw, and from that time had noticed a rapidly increasing enlargement of it."

"A tooth was extracted, but the tumor increased. I decided to remove the inferior maxilla, and operated by an incision from the middle of lip to the lower border of the jaw, and along the border to the angle; then, dissecting the flap off, I extracted the first bicuspid tooth, and sawed the bone at this point, continuing the dissection in the manner suggested by Dr. R. D. Mussey, (*Transactions Am. Med. Association*, vol. 3, p. 364,) for the preservation of the facial nerve; I disarticulated the bone without interfering with the branches of the nerve; in the progress of the operation the inferior maxillary artery was ligated before dividing it.

"The wound healed kindly, and in two weeks was closed; but three days after opened, and a fragment of the remaining portion of the bone which had exfoliated was removed, after which the wound soon closed, leaving the face symmetrical, with a very slight depression in the situation of the body of the removed bone.

"The specimen is one of osteo sarcoma."

Resections of the Lower Jaw. Prof. GUNN. (Medical Independent, April, 1857, p. 67.)

"CASE I.—April 13, 1851. B., aged about 25, presented himself at the college clinic, with a constantly increasing osteoma of the body of the inferior maxilla. As the tumor involved the whole thickness of the bone, resection became an operation of necessity. Chloroform was used, and anæsthesia being complete, I commenced the operation by an incision along the base of the jaw, extending from opposite the lateral incisor to the angle; another was made at right angles from the anterior extremity to the mouth. The facial artery was secured, and a flap, composed of the cheek, turned up, exposing the external surface of the jaw. The dissection was then carried behind the bone, through to the mouth at the anterior portion of the wound, a section made with Hey's saw, the bone separated from the soft parts and resected at the angle. The flap was adjusted, and the wound healed by first intention. Contraction of the internal pterygoid distorted the remaining half of the jaw, giving a wry appearance to the face, and preventing accurate meeting of the teeth. This difficulty was so great as to prevent mastication, and the patient was obliged to subsist on liquid food for many weeks, and a year passed before perfect control of the mutilated member was obtained."

"CASE II.—March 19, 1853. A gentleman, aged about 35, was suffering from a carious condition of the body of the inferior maxilla. The bone was much enlarged, and gave rise to a fœtid discharge. Resection was here, too, an operation, not of choice, but of necessity, and in the performance was almost identical with the preceding case. The closure of the wound was equally rapid and perfect. There was, however, no muscular contraction, and the patient retained full and perfect control of the remaining portion of the jaw, as evidenced by his mastication of beef-steak at the table of his hotel one week from the operation.

"In the first case, which I have repeatedly seen since the operation, a firm cartilaginoid deposit took place along the course of the removed bone. The second case I have never met since his dismissal."

Excision of the Head and Upper Third of Humerus. Prof. GUNN. (Ibid., p. 69.)

"CASE III.—During the winter of 1850–51, a young Irishman, aged about twenty years, presented himself at the college clinic, with caries of the head, and necrosis of the shaft of the humerus, involving the upper two-fifths of the bone. There was also partial anchylosis of the joint, caused, as was afterward shown at the operation, by adhesions in the joint. I determined on resection, and the patient being chloroformed, I carried an incision from the acromion to a point just below the deltoid insertion, through fascia and muscle down to the bone, dissected the tissues from the bone, opened the joint, my progress through which was much impeded by adhesions which nearly obliterated the synovial cavity, dislocated the head, completed the dissection, and sawed through the bone at the deltoid ridge. The circumflex arteries only required ligature, and the wound was dressed with sutures and straps. On the second day erysipelatous inflammation involved the whole arm, from shoulder to hand, which subsided with a profuse discharge of fœtid and ill-conditioned pus from the wound. Quinine, wine, and animal broth were freely exhibited, and union by first intention was secured in the upper two-thirds of the wound, with healthy discharge from the lower portion. Fourteen days from the operation the patient was discharged, and returned to his home."

"CASE IV.—Dec. 13, 1854. H., a lad fifteen years of age. Caries of the head and upper third of humerus. Freedom of motion in the joint, though the whole head seems to be in perfectly softened condition. Operation similar to preceding case, except that the main incision was met at its lower extremity by a short transverse cut. Everything progressed favorably, and on the fourteenth day the patient was discharged, and started on his return.

"These two cases are illustrative of the advantages of conservative surgery. In operating for caries we usually find ourselves in the immediate neighborhood of joints, and while we are generally called upon to sacrifice the whole joint extremity of the bone, we may by resections save a valuable member. In each of the last two cases, by the use of a firm leather splint, embracing the shoulder and arm, the patients were enabled to use the limb for most ordinary purposes. The first I have not heard from since the summer following the operation, when he was performing heavy manual labor. The lad, I heard from a few days since, and he is as useful as most lads of his age upon a farm."

Prof. GUNN reports another *Operation for Removal of the Head of the Humerus,* performed on the 5th of October, 1857. (Med. Independent, Dec. 1857, p. 576.)

"W. W. W., aged twenty-nine, was suffering from a carious condition of the head of humerus, of some months' standing. From the proximity of the joint, it was feared that the disease had extended into that cavity. The operation was, however, in its first stages, only exploratory. An incision was carried, from over the acromion, downward, dividing longitudinally the deltoid muscle, which was raised from the bone, thus exposing the diseased surface, an examination of which betrayed extensive communication with the joint. The incision was now extended, the capsular ligament divided, the head of the bone dislocated, and its surgical neck sawn through. Only one vessel required ligature. The wound was closed by seven sutures, and tepid water dressings were applied. But little febrile reaction supervened. The sutures were removed on the fourth and sixth days, when perfect union had taken place, except at a point corresponding with the fistulous opening. A generous diet, with ale or porter, supported the patient after the first three or four days from the operation. At the present date—three weeks subsequent to the operation—the wound is entirely closed, except at the original fistulous opening, which is nearly filled up. The discharge is but trivial, and the patient is attending to his business.

"It will be noticed that in this case, as in one of the two previously reported, a single straight incision only was used. This form of incision is abundantly ample, and far preferable to the flap or angular form, as it exposes less surface, and leaves less work for nature to accomplish in the healing process."

Exsection of the Head of the Humerus. GEORGE C. BLACKMAN, M.D., Professor of Surgery, &c. (Western Lancet, Aug. 1857, p. 551.)—The following case is reported by Dr. Wm. Hays, who, as resident surgeon, had charge of the after treatment.

"Richard Pierce, a lad aged five years, was admitted into the Commercial Hospital, April 17th. His mother states that some months previous to his admittance, while playing with his brother, he fell, striking his right shoulder against a rock. No particular notice was taken of the accident, until three weeks afterwards, when tumefaction began in the axilla, attended with considerable pain. Emollients were applied, but the tumefaction increased, and in about three months after its first appearance the abscess opened, with a discharge of a seropurulent character.

"At the time of his admission, the lad was in pretty good health, but not as good as it was previous to the injury. There was considerable tumefaction in the axilla as well as in the deltoid region; a fistulous opening connecting the axilla with the head of the humerus and glenoid cavity, from which there was a constant discharge. The mobility of the limb was very slight, the patient being unable to abduct the elbow, or to lift the hand to the head.

"The pain being so great, the discharge so excessive, and the lad's general health seeming to fail, on the 6th of June Prof. Blackman decided to operate.

"The patient having been brought under the influence of chloroform, the head of the bone was exposed by making a triangular flap which detached the deltoid muscle. It proved to be in a carious condition as well as the upper extremity of the shaft, about an inch of the latter requiring removal, which was easily effected by means of a small Luer's saw. The glenoid cavity was also involved, and a considerable portion of it was removed with the 'bone-gnawing' forceps, which Prof. B. regards as a very valuable instrument in most operations, for detaching small portions of dead bone.

"The wound was covered with cold water dressing, and Fox's apparatus for fracture of the clavicle applied. The wound healed kindly, and on the fourth day after the operation the stitches were removed.

"Aug. 10th. The wound has healed without an untoward symptom. The lad is in good health, and has pretty good use of the limb, being able to abduct the elbow or lift the hand to his head.

"He is ready for his discharge, and there can be no question that in the course of a few months he will have nearly the perfect use of his arm."

Excision of the Os Calcis; Improved Method of Operating, and Rapid Recovery. CLIFFORD MORROGH, M.D., of New Brunswick, N. J. (Med. and Surg. Reporter, June, 1857, p. 284.)—This operation was resorted to in a case of destructive inflammation of the os calcis and neighboring soft parts, seriously compromising the general health, in a patient aged twelve years, who, nine months previously, had had his foot slightly squeezed between two railroad cars.

"The boy was placed on his left side on a table, and rendered insensible with chloroform.

"A vertical incision was made over the posterior extremity of the os calcis, extending from the superior to the inferior surface. This was continued along the inferior surface of the bone to its articulation with the cuboid, taking care to keep outside of the external plantar artery.

"The incision was then carried upward to a short distance above the superior surface of the bone, without wounding the peroneal tendons. This incision described a square flap on the outside of the foot, which was dissected up, and the tendo-Achillis separated close to its attachment.

"A strong narrow scalpel was then introduced under the peroneal tendons, and made to separate the calcaneo-cuboid articulation, without severing the tendons or the artery beneath.

"The knife was then introduced between the upper surface of the bone and the astragalus, made to cut the interosseous ligament, and gradually separate the articular surfaces. The calcaneum was then rotated, so as to bring its upper surface outward, till the internal made its appearance, when the soft structures were carefully separated, principally by the handle of the scalpel, thus completing the operation.

"After this mode of proceeding, we had the satisfaction of seeing the posterior tibial and plantar arteries pulsating in perfect integrity, while the tendons of the peroneal muscles, as well as those of the flexor longus pollicis, flexor communis digitorum, and tibialis posticus, were uninjured. No ligatures were required, the flap was approximated. A piece of flat sponge applied over the wound, and a gutta-percha splint previously moulded over the instep, so as to keep the foot extended. The operation was followed by a total cessation of pain and febrile action.

"The boy improved rapidly in health. The wound healed mostly by adhesion, the rest by granulation. The cavity partly filled up by what I suppose to be fibro-cellular tissue, and in two months after the operation the boy could run swiftly.

"At the present time he wears a small pad in the shoe under his heel, and does not experience the least inconvenience from the deficiency of the bone."

A Case of Excision of the Hip-Joint for Morbus Coxarius, with remarks upon the propriety of such an operation, and a summary account of the recorded cases up to the present time. R. A. KINLOCH, M.D., Surgeon to the Roper Hospital, and Lecturer on Surgery in the Charleston Summer Medical Institute. (Charleston Med. Journ., May, 1857, p. 307.)

"John McAllen, a native of Ireland, aged twenty, a laborer by occupation, was admitted into the Roper Hospital on the 2d of April, 1856. Two years previous he began to suffer from vague undefined pain about the lumbar region and the hip-joint of the right side. From time to time he had been compelled to lie up for a short period, but never, until nine months ago, had he been sufficiently unwell to be obliged to give up his usual avocations. More lately his attention had been attracted by a decided swelling beginning to manifest itself upon the front of his thigh. This had gone on increasing for several weeks, until it had attained its present volume. There was also a disposition, lately, for the thigh to become flexed upon the pelvis, and now the limb could not be entirely straightened. Upon examination of the patient, who was emaciated and presented a marked scrofulous appearance, I found a large fluctuating swelling, evidently sub-fascial, occupying nearly the whole anterior part of the middle third of the right thigh. The thigh was slightly flexed upon the pelvis, and the knee and foot turned a little in; the limb, generally, was emaciated. There was likewise a small swelling over the nates, behind and lower than the trochanter; this, like the larger swelling, did not in any way disappear on pressure. The swelling upon the thigh was what had given the patient most anxiety, and induced him to come to the hospital. He only wanted something done for this, as he felt well enough, as yet, to go about, and for aught else would not have been disposed to lie up. The diagnosis was at once made out as morbus coxarius. The swellings were considered to be chronic abscesses, but at first I could not determine if they communicated with the joint. The disease of the joint did not seem to have progressed very far, as the patient walked readily, and the joint functioned very well: no grating could be discovered on manipulation, nor did extensive movement give much pain. I delayed opening the abscesses for several days, in order to watch a little the constitutional power of my patient, and further, too, to have my diagnosis more certain. I prescribed for him cod-liver oil ℥ss. with wine ℥ij., three times a day, and an anodyne at night. April 10, the abscess of the thigh having materially increased in size, and the patient complaining of the feeling of tension, I made a kind of valvular opening at the dependent part, on the outer side of the sartorious muscle, and evacuated a large quantity of thin pus. April 22, I punctured the abscess over the nates, and, subsequently to this, both abscesses having refilled, were again opened on several occasions. May 4, distinct fluctuation was discoverable higher up, behind the trochanter. A puncture was made here, and considerable pus flowed away, mixed, it appeared, with synovial fluid. Consequent upon this there supervened considerable irritative fever, with gastric disturbance and great restlessness. The oil was now discontinued, and p. gum opii, gr. j., with a glass of wine, given every three hours. The distressing symptoms were modified after a couple of days, and the opium was then only given at bedtime. The discharge from the last abscess was now very copious and offensive. I had expressed a gloomy prognosis to some friends of the patient, and on this account I was applied to, on May 10, to give him a discharge from the hospital, his friends preferring that he should die at home. At their earnest solicitation, a few days after, I consented to visit him privately. At the expiration of a few days, I was much pleased to notice that a decided improvement had taken place under a free allowance of good wine, with nourishing diet, and opiates given when required. The discharge, though, continued profuse, and there were many evidences of extensive disease of the joint. Once or twice, when at the hospital, he heard me say something about dead bone and the persistence of the discharge. He now wanted to know if I could not in any way take out the dead bone, saying that he would submit to any operation that promised success. Eight or ten days elapsed, and finding that the discharge was as profuse as ever, moreover that ugly bed-sores were about appearing, I began to think that excision of the joint might offer a little chance. He seemed strong enough to stand an operation quickly performed, and this appeared the only alternative left. I then fairly stated to him my opinion, and told him how slight a chance the operation afforded; that it might hasten his end. He decided that the attempt should be made. I assumed the responsibility; but I determined that first I would explore the condition of the joint by making a free opening upon it through the cavity of a large abscess, just above the trochanter, and over the head of the femur. To open this abscess freely, I conceived to be proper practice, even though I did not intend to resect the joint. It would be but carrying out the improved plan of Mr. Gay for treating suppurating joints. If the capsule of the joint was found open, and the head of the bone caried, then I would proceed to resect. Previous to commencing my incisions, I had decided, by the test of Nélâton, that the head of the femur *was still in the acetabulum.* On the 31st of May, 1856, my patient having been brought under the influence of ether, (I used ether then instead of chloroform for the first and last time, at the suggestion of a friend; the patient took fully a pound before he became affected,) was turned slightly upon the left side, and held in that position by assistants. I then thrust the point of a small amputating knife a little in front of the base of the trochanter, and carrying it upward and outward, and then downward and backward, formed a semilunar incision encircling the trochanter, and consequently had a sort of semilunar flap with the convexity upward. The knife went easily through the walls of the abscess alluded to above, and exposed its entire cavity. The finger passed in, and to the bottom of the wound, discovered plainly considerable destruction of the capsule of the joint, and also the head of the bone, still in the acetabulum, but quite rough, and partially destroyed by caries; the brim of the acetabulum, too, could be felt considerably diseased. Under these circumstances, I conceived it best to proceed and resect the head of the femur. The point of the knife was accordingly passed across the portions of the capsule yet entire. My assistant then flexed and adducted the thigh, and, the round ligament not holding, the head was thrown out of the cavity, and then forced as much as possible through the external wound. I next passed the chain-saw behind the head and neck, and quickly divided the bone above the trochanters. Proceeding to examine the acetabulum, I was shocked at the extent of the disease. The brim was rough and crumbling, and there was an extensive perforation of the floor. With the gouge forceps I took away some portion of the brim, but soon desisted, as I felt it impossible to take away anything like the whole of the diseased structures. The wound was brought together by a few sutures, the lower end only kept open by a little lint to facilitate the exit of the discharge, the patient removed to bed, and the limb extended and kept steady by pillows. Not reacting as well as I desired, I ordered brandy freely until my afternoon visit, also a full dose of opium. In the afternoon his condition seemed better; he had warmth of skin, and a fair pulse. The brandy was continued, according to the indication, during the night, but upon my morning visit I was sorry to discover a greater disposition to collapse. From this time he refused to respond to the most active internal and external stimulation, but sank and died, not quite thirty hours after the operation. I was not able to examine the body after death."

In addition to the case in full, we quote the author's tables of forty cases, including three American, and conclude with a single paragraph in which Dr. Kinloch gives his own practical conclusions:—

TABLE OF CASES IN WHICH THE HIP JOINT HAS BEEN RESECTED FOR DISEASE.

No.	Operator.	Sex and Age of Patient.	Duration of Disease.	Condition of Patient, and State of Parts at time of Operation.	Date of Operation, and Extent of Parts removed.	Progress and Result of Case.
1	Schmalz.	....	....	Caries; head disconnected from shaft.	1816................................	Recovered.
2	White.	M. 14.	three years.	Great exhaustion; head on dorsum of ilium; fistulæ.	1818. Four inches of bone removed.	Fever slight; discharge little; health rapidly improved; well in a year; good use of limb.
3	Hewson.	....	....	Caries..........................	1823. Resected just above small trochanter.	Perforation of acetabulum. Died in three months.
4	Schlitching.	....	....	Caries, with abscess..........	1829................................	Well in six weeks; patient able to walk.
5	Kluge.	....	....	Caries head separated from shaft.	....	Died two months after operation.
6	Vogel.	Child.	....	Caries..........................	....	Recovered.
7	Textor.	....	....	Disease of neck of bone and trochanter.	....	Sloughs formed on sacrum; death on fifty-third day.
8	Textor.	....	....	Caries; head out of acetabulum.	....	Gangrene of wound, and death on fourth day.
9	Heim.	....	....	....	1829....	Recovered.
10	Brodie.	....	....	Caries; head in acetabulum.	1836................................	Died in a few days.
11	Textor.	. ...	....	....	1845. Removed all above lesser trochanter.	Complete recovery.
12	Fergusson.	M. 14.	some months.	Head on dorsum; large sinus.	1845. Four inches taken away.	Shock slight; wound healed well; health rapidly improved; limb quite useful.
13	Fergusson.	M. 8.	some time.	Emaciation and hectic; head dislocated; abscess over ilium; sinuses.	1847. Head and neck with edges of acetabulum removed.	Health improved; wound never entirely healed; died, eight years after, of liver disease.
14	Roux.	M. 15.	longstanding.	Emaciation and hectic; dislocation, no abscess or fistulæ.	1847. Head and part of neck removed.	Secondary hemorrhage; abscess between the glutei; death on seventh day; disease of acetabulum.
15	Simon.	Child.	two years.	Head dislocated upon acetabulum; abscesses and sinuses.	1848. Head and portions of acetabulum removed.	Died four days after operation.
16	French.	F. 10.	some time.	Head carious, and upon dorsum of ilium.	1848. Head and trochanter taken away; acetabulum healthy.	Recovered.
17	Fergusson.	....	....	....	....	Recovered perfectly.

18	Walton.	M. 16.	two years.	Caries; severe pain; sinuses with discharge; some disease of acetabulum.	1848. Removed four inches of femur, and portions of acetabulum.	Pain ceased; health rapidly improved; wound healed well.
19	Walton.	....	....	....	1848....................................	Unsuccessful.
20	Smith.	M. 33.	year and half.	Head dislocated; caries; sinuses.	1848. Removed three inches and rim of acetabulum.	Symptoms improved for four months, but in two weeks more he died; Bright's disease of kidney, and caried vertebræ found.
21	Fergusson.	F. 13.	three years.	Caries; head dislocated.	1849. Removed head and trochanter major.	Recovered perfectly.
22	Morris.	M. 18.	six years.	Neck nearly destroyed; head not dislocated.	1849. Head and neck removed.	Recovered, with motion of thigh, and could walk a short distance.
23	Cotton.	F. 12.	....	Ulcer upon hip; caries; sinuses; emaciation.	1849. Four and a half inches removed.	Slight fever; symptoms soon improved; ulcers healed; health gaining.
24	Buchanan.	M. 41.	two years.	Great suffering; grating in joint; profuse discharge.	1850. Resected below trochanter; head and edge of cavity carious.	Recovering rapidly, but died of dysentery three months after; parts found healthy and in advanced stage of repair.
25	Skey.	F. 13.	three years.	Emaciated and nearly worn out; femur dislocated on dorsum; large ulceration on trochanter; sinuses discharging freely.	1850. Head found absorbed; portion of neck and the trochanter removed.	Result not mentioned.
26	Sayre.	....	....	Caries of head and neck.	1851. Head removed.	Wound healed, but abscesses formed; did not progress favorably.
27	Jones.	F. 32.	18 years.	Powers of life feeble; head carious, and on dorsum; sinuses.	1851. Head removed.	Recovered; walks some, with a high heel and a stick.
28	Stanley.	M. 18.	several years.	Feeble and emaciated; head dislocated; fistulæ discharging freely.	1852. Large abscess found under glutei.	Symptoms improved rapidly; wound not healed entirely, but health robust eighteen months after operation.
29	Hawkins.	F. 10.	four years.	Head carious; emaciation and hectic.	1852. Removed one inch below the trochanter, also edges of acetabulum.	Died on third day; found large perforation of acetabulum.
30	Bigelow.	M. 10.	....	Caries and dislocation.	1852. Bone separated while sawing.	Death on the twelfth day.
31	Erichsen.	M. 14.	several years.	Greatly reduced; bone dislocated.	1853. Neck and great trochanter removed.	Rapid improvement; suppuration profuse; died some months after.

No.	Operator.	Sex and Age of Patient.	Duration of Disease.	Condition of Patient, and State of Parts at time of Operation.	Date of Operation, and Extent of Parts removed.	Progress and Result of Case.
32	Parkman.	M. 12.	six months.	Hectic; abscess; caries.	1853 Head and part of neck removed.	Three months after, progress very satisfactory.
33	Fergusson.	F. 13.	one year.	Head dislocated; abscess.	1854. Removed head and large trochanter.	Improvement marked.
34	Erichsen.	M. 8.	longstanding.	Emaciation; hectic; caries.	1854. Removed head and edges of acetabulum.	Recovered.
35	Sayre.	F. 9.	18 months.	Caries; dislocation on dorsum; abscesses; great prostration; sweats, &c.	1854. Removed head and neck; gouged away portion of brim of acetabulum.	Recovered, with limb only quarter of an inch short; flexion, extension, and rotation preserved; general health perfect.
36	Shaw.	M. 17.	7 or 8 months.	Dislocation and protrusion of head through fistulous opening.	1856. Head removed.	Recovery, with a very useful limb; can walk three miles at a time.
37	Shaw.	F. 14.	two years.	Dislocation; fistulæ; sinuses.	1856. Head and neck removed.	Excellent condition thirteen weeks after the operation.
38	Hancock.	M. 14.	five yeass	Caries, with abscess discharging and connecting with interior of the pelvis. Probe passes from a fistulous opening in the groin into the pelvis, and then out through the acetabulum; great emaciation; night sweats and cough, with expectoration streaked with blood.	1856. Resected below great trochanter; also removed the whole floor of the acetabulum.	Patient hopping about on crutches sixteen weeks after the operation, with robust health.
39	Erichsen.	M.	....	....	1857. Removed head.	One month after the operation, the patient is doing well.
40	DeMorgan.	M. 17.	....	Caries of head; dislocation.	1857. Head and neck removed.	Little constitutional disturbance; patient doing well.

NOTE.—After the materials for the above table had been gathered, I for the first time saw the article of Dr. Sayre, of New York, in the 14th vol. of the New York Journal of Medicine. I was pleased with his table, and so made my own conform to his arrangement in part. One or two cases recorded by him I have not been able to find reports of anywhere else, so these must rest upon his authority. I have no doubt of their correctness, and it is likely that I have overlooked them in my examination of the various periodicals in my possession. I present in my list several cases omitted by Dr. Sayre; and writing two years after him, have of course recorded many which have recently occurred.—R. A. K.

"The above record proves the mortality to be much less than can be shown for amputation at the joint; and so far as it pronounces upon the utility of the limb after excision, the verdict is satisfactory."

Dr. Kinloch's creed upon the question of operating in hip-joint disease may be learned from its expression in the following words:—

"To explain, then, more accurately my views as to the propriety of excision of the hip-joint for disease, I would say that so soon as I could discover the existence of abscess of the joint, I should *entertain the prospect of the operation.* The late researches of Mr. Gay and others have fully established the advantages of making free openings into suppurating joints. This should be the practice, then, thus early in the disease. Afterward, the usual treatment for improving the general health, and for securing absolute rest to the joint, should be persevered in. If no improvement of health, and no diminution of the discharge took place within a reasonable time, I should consider that the greatest amount of security was offered by excision. I do not mean to say that recovery would not, under these circumstances, take place in many instances without operation; but I think that it would, upon the whole, be more doubtful,—I should have more faith in surgery than in the *vis medicatrix naturæ.* I advocate an early operation, because delay only lessens the chances of success; but I likewise am in favor of action in very late stages of the disease, as must be seen from my course in the case which has led to these remarks. But here *the operation is, properly speaking, an experimental one.* To my mind, however, it is justifiable, because I must believe that it will seldom be instrumental in shortening life. If the patient is not too reduced to stand the shock of an operation, I think it affords him a little chance, even though disease may be so extensive as not to permit of its entire removal. If the pelvic portion of the joint has suffered extensively, and cannot be entirely removed, its abnormal action is more likely, as already intimated, to be arrested than increased by the operation."

Compound Dislocation of the Long Bones, considered with especial reference to the value of Resection. FRANK HASTINGS HAMILTON, M.D., Professor of Surg. Med. Dep. University of Buffalo. (American Journal of the Medical Sciences, Oct. 1857, p. 324.)—This subject is discussed with characteristic clearness and thoroughness in an elaborate paper, in which two cases are given in illustration. We have room only for the concluding remarks.

"Thus, if we consider the question of the life of the patient only, the argument and the testimony seem to favor resection in a great majority of cases of compound dislocations occurring in large joints, and in a considerable number of cases of similar accidents in the smaller joints. It is certainly more safe than non-reduction or reduction without resection, and it is probably quite as safe as amputation or tenotomy.

"But there is another question, which is, in our estimation, secondary to the one now considered, but which is often, in the estimation of the patient himself, of the first importance—namely, by which method will he suffer the least maiming or mutilation?

"This question I do not find it difficult to answer. Certainly it is not by non-reduction or by amputation; and, putting tenotomy aside, it is now a question only between reduction without resection, and reduction with resection. These two methods, one of which experience has shown to be fraught with danger, and the other of which experience has shown to be relatively safe, are now to be compared in a point of view in which their antagonisms are perhaps less conspicuous, yet sufficiently marked.

"*First.* In either case the inflammation consequent upon the injury may be violent, and the recovery slow and tedious. The same arguments, however, which we have applied to the question of the comparative danger of the two modes, must apply with nearly equal force to this question of maiming; since the amount of maiming must often be governed by the intensity and duration of the inflammation, and upon this point the testimony has been shown to be in favor of resection.

"It will be observed that not only is the danger of maiming rendered more considerable by reduction without resection, because the inflammation is so much more likely to extend to the tendons and muscles, causing them to adhere to each other, and to become subsequently atrophied, a condition from which they often never completely recover, but also because the ligaments and capsules of the joints, with the synovial surfaces, are in consequence encroached upon, and the freedom of motion is ever afterwards greatly restricted, if not completely lost. This marked impairment of the functions of the joint does not always happen, but it cannot be denied that it does generally. Indeed it is by no means uncommon for these accidents to be followed, after ulcerations of the cartilage, by copious bony deposits in and around the joints.

"How is it, on the other hand, with these joints after resection? I have thus far heard of no cases in which complete anchylosis resulted; but in all considerable freedom of motion has returned, and in some the restoration in this respect has been nearly or quite as complete as before the accident.

"Says Dr. Kerr, of Northampton:—

"'Several cases of compound dislocation of the ankle have fallen under my care, and it has been uniformly my practice to take off the lower extremity of the tibia, and to lay the limb in a state of semiflexion upon splints; by this means a great deal of painful extension, and the consequent high degree of inflammation, are avoided. The splints I used are excavated wood, and much wider than those in common use, with thick movable pads stuffed with wool. I keep the parts constantly wetted with a solution of liquor ammoniæ acetatis, without removing the bandage. In my very early life, upward of sixty years ago, I saw many attempts to reduce compound dislocations without removing any part of the tibia; but, to the best of my recollection, they all ended unfavorably, or, at least, in amputation. By the method which I have pursued, as above mentioned, I have generally succeeded in saving the foot, and in preserving a tolerable articulation.'*

"Sir Astley Cooper has made a valuable experiment to determine the condition of the new joint under these circumstances; and the vast number of cases in which resection has now been practiced in cases of caries of the articulating surfaces, and their results, add still more substantial proofs as to the usefulness of the joints after such operations.

"'I made an incision upon the lower extremity of the tibia, at the inner ankle of a dog, and cutting the inner portion of the ligament of the ankle-joint, I produced a compound dislocation of the bone inward. I then sawed off the whole cartilaginous extremity of the tibia, returned the bone upon the astragalus, closed the integuments by suture, and bandaged the limb to preserve the bone in this situation. Considerable inflammation and suppuration followed; and in a week the bandage was removed. When the wound had been for several weeks perfectly healed, I dissected the limb. The ligament of the joint was still defective at the part at which it had been cut. From the sawn surface of the tibia there grew a ligamento-cartilaginous substance, which proceeded to the surface of the cartilage of the astragalus, to which it adhered. The cartilage of the astragalus appeared to be absorbed only in one small part; there was no cavity between the end of the tibia and the cartilaginous surface of the astragalus. A free motion existed between the tibia and astragalus which was permitted by the length and flexibility of the ligamentous substance above described, so as to give the advantage of a joint where no synovial articulation or cavity was to be found. This experiment not only shows the manner in which the parts are restored, but also the advantage of passive motion; for if the part be frequently moved, the intervening substance becomes entirely ligamentous; but if it be left perfectly at rest for a length of time, ossific action proceeds from the extremity of the tibia into the ligamentous substance, and thus produces an ossific anchylosis.'*

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* Cooper on Dis. and Fract., p. 275.

"*Second.* Is it not probable, moreover, since the limb can be retained in place so much more easily after resection, that it will actually, in a majority of cases, be found to have been retained in place more perfectly? Even after simple dislocations, especially in those occurring at the ankle-joint, great deformity and much maiming are the not unfrequent results, and that too when all diligence and care have been employed. It has been impossible always to maintain a perfect apposition in the articulating surfaces. How much greater must be this difficulty in cases of compound dislocations!

"*Third.* The only argument which remains in favor of reduction without resection is the necessary shortening of the limb after resection. But this need seldom perhaps to exceed three-quarters of an inch, and often not more than half an inch; an amount of shortening which, as I have had occasion to prove when treating of fractures, does not necessarily produce a halt, and which indeed is often not known to exist by the patient himself.

"*Finally*, it must not be inferred that the writer intends to recommend resection as a universal practice in cases of compound dislocation of the long bones. He has only sought to determine in a general manner its relative value as compared with other modes of procedure; and especially has it been his intention to bring more prominently into view the importance of rest and relaxation to the muscles, as an element in the treatment most essential to success. To declare its special application to cases, would demand a treatise more elaborate than it was proposed to write. If, however, one were to speak of the individual bones only, there seems sufficient authority in the facts and arguments already presented to conclude that resection is applicable to certain compound dislocations of the clavicle, humerus, radius and ulna, fingers, femur, tibia and fibula, and toes; in short, to all of these accidents occurring in the long bones of the extremities."

Successful Amputation at the Hip-Joint. GEO. C. BLACKMAN, M.D., Professor of Surgery in the Medical College of Ohio; Surgeon to the Commercial Hospital, Cincinnati. (Western Lancet, Jan. 1857, p. 7.)

"John Pfiel, a German, twenty years of age, was admitted into the Commercial Hospital, November, 1855. He complained of an enlargement of the lower part of the femur, which somewhat interfered with locomotion, but caused him but little pain. The tumor, evidently of an osseous character, was oblong in shape, and extended from just above the condyles to about the middle of the thigh. The integuments were of natural appearance. In the course of from four to five weeks, the tumor was found to have rapidly increased in size, and bid fair soon to involve the whole of the femur. In a clinical lecture upon the case, we expressed our fears that the disease was of a malignant character, and gave an unfavorable prognosis. At the same time, the patient's health being tolerably good, we proposed amputation at the hip-joint as the only alternative. To this he assented, and on the 8th of December, 1855, in the presence of the class, we disarticulated the thigh, assisted by Prof. T. Wood, Dr. Thompson, of Columbus, Dr. Fries, of Cincinnati, Dr. Evans, of Covington, and Dr. Rae, the House surgeon. The operation adopted was that by the anterior and posterior flaps, and was completed within thirty seconds. On examination, the femur was found to be affected with osteo-cephaloma, the disease involving two-thirds of the shaft of the bone. As the patient was under the influence of a mixture of chloroform and sulphuric ether, he suffered no pain, but was greatly prostrated—although the hemorrhage, owing to the skilful compression by Prof. Wood, was slight. For several days the pulse ranged from 130 to 160 per minute; and it was not until after the fourth day that reaction was satisfactorily established. The greater portion of the surfaces of the flaps united by the first intention; but some sinuses continued for several months, and even to this day (Dec. 22, 1856,) there are two or three fistulous openings, which probably communicate with the cotyloid cavity. During the month of September last, the patient suffered severely from a dysenteric affection, and for weeks was in a very feeble state. For some time past he has been in the City Infirmary, near Carthage, and we have been informed within the past ten days by the physician of the Institution, Dr. Lassing, that although not yet fully recovered from the attack to which we have alluded, there are no appearances of a return of the disease for which he submitted to amputation at the hip-joint. It will be remembered that this report is written 54 weeks after the operation. The treatment of the case, for weeks after the operation, was under the skilful superintendence of Dr. Rae, and to his unremitting care the patient is undoubtedly indebted for his recovery."

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* Cooper on Dis. and Fract., p. 281.

Dr. Blackman's paper furnishes, in conclusion, a valuable summary sketch of the statistics of the operation.

For want of space we are compelled to postpone the remainder of this Report to the July Number. It will appear in the form of a Second Part.

Bi-Monthly Periscope.

PRACTICAL MEDICINE.

I. On Emboli. By *Professor Schutzenberger.*—The following are the principal conclusions of an elaborate series of papers, published by Professor Schutzenberger, of Strasburg, upon the obstruction of arteries by fibrinous clots detached from the heart or large vessels.

1. Fibrinous concretions or solid bodies formed in the heart or large arteries may become detached from their primary seat, be carried into the torrent of the circulation, and obstruct different secondary branches of the arterial tree. The circumstance is neither absolutely rare nor exceptional, and it constitutes a special and very remarkable affection of arteries to which Virchow has given the name of arterial emboli. 2. The existence of the affection is proved, (*a*) By scientific induction, which demonstrates the possibility of the formation of solid bodies in the heart and large vessels, and the probability that such bodies may become free and floating; and by experiment, which proves that the sanguineous current may carry them to a distance. (*b*) By numerous and conclusive clinical and microscopical observations, agreeing among themselves and admitting of no other interpretation. (*c*) By microscopic researches, which have shown in some cases the speciality and identity of certain of these bodies simultaneously observed in the heart and in the plugs obstructing the arteries. 3. Arterial emboli is then a real and very serious disease, not of infrequent occurrence, but long misunderstood. It should be admitted into the nosological

scheme, and deserves all the attention of the clinical observer and the pathological anatomist. 4. It has been observed as a consequence of (1) Gangrenous phlebitis of the pulmonary veins. (2) Of organic affections of the left side of the heart; and of (3) The atheromatous degeneration of the large arterial trunks. Its most frequently observed cause is found in the fibrinous, or calcareous concretions, or in the polypiform excrescences developed on the mitral valve, and carried away by the circulating torrent. 5. The form, size, consistence, color, and nature of these obturating bodies are variable and notably differ, according to whether the obstruction examined be old or recent. In the former case they may have undergone transformations which may render them unrecognizable; while in the latter, their fibrinous, calcareous, verrucous nature may be shown. 6. When the patient does not succumb to a first arterial obstruction, generally others are produced, the multiplicity and succession of the arterial lesions being one of the characters of the disease. Multiple obturation may be successively produced from the periphery toward the heart, either in various points of the same arterial branch, or in different arterial divisions. 7. The arteries which have been most frequently found obstructed are the subclavian, the internal carotid, the arteries of the lower and upper extremities, the splenic and renal arteries, the external carotid, the mesenterics, etc. 8. The obturation is ordinarily produced at the point of narrowing of an arterial branch immediately below the bifurcation, or the point of departure from a large branch, in the points where the artery incurvates or traverses aponeurotic or bony canals. 9. At first the arterial coats are healthy, and the plug is surrounded by a recent coagulum, which extends upward to the next collateral. Below, the artery may be empty, or may contain recent coagula. The plugs differ from secondary coagula by their color, consistence, and composition. As a consequence of arterial obturation the outer coat may inflame consecutively. The plug contracts adhesions with the inner coats, and the whole is transformed into a ligament-like tissue. 10. If, after the obstruction, a sufficient collateral circulation be set up, the lesion remains localized, and only gives rise to temporary functional disturbance. But if such collateral circulation be not set up, or only imperfectly, consecutive changes are produced in the organs to which the artery is distributed. In the case of obturation of the arteries of the extremities, in the absence of collateral circulation, mortification, or gangrene, general or partial, dry or humid, may be produced. In parenchymatous organs very exactly circumscribed sanguineous or fibrinous infarctus are produced. In the brain, this infarctus usually gives rise to yellow ramollissement, and it is highly probable that certain circumscribed indurations are due to obturation of the arterial ramuscules. In the spleen and the kidneys the infarctus constitutes an entirely special lesion, generally of a conical form, exactly limited, of different color according to its age, and frequently more dense than the remainder of the parenchyma. It is probable that emboli of the small arteries may give rise to other, as yet little known lesions of the parenchymatous organs. 11. The symptoms vary according to the arteries obstructed. Obturation of the cerebral arteries gives rise to disturbance of function analogous to an attack of apoplexy. The symptoms do not differ from those attendant upon cerebral hemorrhage or acute ramollissement. Emboli of the arteries of the limbs is indicated by feelings of numbness, pricking, painful shootings in the limbs, and cessation of the beating of the arteries. These symptoms may disappear if a collateral circulation becomes established, but when this is not the case the ulterior symptoms are those of gangrene. 12. The treatment of the affection is at present only palliative and symptomatic.—*Gaz. des Hôp.*, 1857. No. 80.—*Med. Times & Gazette*, March 18, 1858.

II. VALERIANATE OF AMMONIA SUCCESSFULLY USED IN NEURALGIA.—The efficiency of the valerianate of ammonia as a remedy in the cure of neuralgia, has been frequently proved in a number of patients admitted at the Royal Free Hospital, under the care of Dr. O'Connor. The following case, of twenty-one years' almost constant suffering, is an excellent illustration of the success attending its use:—E. W., a woman of color, thirty-eight years of age, single, by occupation a dress-maker, was admitted an out-patient, under the care of Dr. O'Connor, on the 24th of February last. She stated that since the age of seventeen she had been a constant sufferer from a neuralgic affection of the left side of the head, face, and neck, from which she was seldom free for twelve hours at a time, and her sufferings were often so great as to make life feel a burden to her. She had been under the care of many medical men, and had, without benefit, obtained advice at nearly all the medical institutions of the metropolis. Large doses of quinine and iron, as well as the internal and external use of belladonna and other anodynes, with hydrocyanic acid, were had recourse to without any good result. When the patient presented herself at the Royal Free Hospital she was suffering excruciating pain over the whole of the left cheek, there was dropping of the left eyelid; otherwise she was in good health, and from the age of fourteen had regularly menstruated; there was no evidence of deranged stomach, and she had never suffered from any other illness. These decayed stumps were removed. The dose of the valerianate of ammonia was increased from one drachm to one drachm and a half three times a day. On the 10th of March she was entirely relieved.—*Med. Times and Gazette*, April, 1858.

MATERIA MEDICA AND THERAPEUTICS.

ON THE MEDICINAL ACTION OF LUPULINE. By *Walter Jauncey, L.R.C.S. Ed.*—The hop, although known long since as a medicinal plant, has not been generally used as such, unless in combination; and most authors on materia medica mention it as deserving of attention.

Two years ago, being in a hop district at the period of gathering hops, I thought it a favorable opportunity for commencing an inquiry into their medicinal efficacy. It might not, however, be out of place, to give first a short sketch of the mode of cultivation and preparation of the hop of commerce, as observed in the Worcester and Hereford plantations. The hops are planted about March, and growing but a little the first year, bear scantily the next, and come to their full vigor in the third or fourth. In May, poles are stuck in the ground for the young vines to grow upon. The plants are arranged either on the summit of parallel ridges, (so that aisles are formed when the vines have twined to the tops of the poles,) or in clumps at right angles to each other on the level. Flowering in July, the female plants bring their catkins or hops to maturity in September. These are picked from the vines by hand in the hopyards, and are brought to kilns, where they are spread upon horse-hair cloths, and dried by coke fires, and often are bleached by means of sulphurous acid vapor. This practice is, however, I believe, illegal. The dried hops are then broken, by means of ordinary rollers and sieves, or by machines for the purpose, and are lastly pressed into bags or pockets, and constitute the hops of commerce.

The virtue of the hop, as is well known, is concentrated in the yellow powder at the base of the scales called lupuline. In the process of breaking the hops, mentioned above, a large proportion of this is knocked out, some being lost, and some is mixed afterwards with the broken hops, so that the proportion contained in different samples of even good hops, is very variable. I have found it range in my experiments from one-fifth to one-ninth. This shows, that for medicinal purposes, it is necessary that the lupuline, and not the hops, should be used; and it is worthy of note that hops, unless broken in the injurious way described, do not sell so well in the market.

The lupuline so obtained is a powder of a deep-yellow color, sticking when taken between the fingers, gradually sinks in water, and possesses a peculiar, not unpleasant odor, and a bitterish aromatic taste: mixed with the lupuline are fragments of the broken strobiles and some of the hop seeds. Lupuline loses activity by exposure to air, its color is spoiled, and its efficacy impaired by access of light. I have noticed that it is necessary to exhibit larger doses of old than fresh lupuline. The most important constituent of lupuline appears to be a volatile oil, which is partially soluble in water, and very soluble in alcohol and ether; its smell resembles, but is stronger and less pleasant than that of hops, and there is an unpleasant acridity in the taste. Some writers have described the color as yellowish, but I have always obtained it of a mahogany hue, although I have taken care that it should not be empyreumatized. The partial solubility of the oil in water renders it troublesome to distil, since, if you use much water, you break the retort. After having, in spite of various expedients which I adopted, broken several glass retorts, I used a tin one, which enabled me to obtain the desired result, though a copper one would have been preferable to tin. A striking peculiarity about the taste of lupuline is its evanescence; and this is important, as it enables one to distinguish the hop from other bitters substituted for it, there being, as Dr. Christison remarks in the *Edinburgh Monthly Journal* for 1853, but one other plant, a leguminous one, in New South Wales, which resembles it in this particular; but when the pure volatile oil is placed on the tongue, an unpleasant flavor, somewhat similar to that caused by inhalation of prussic acid, lingers about the pharynx for some time. The oil of hop is, I feel confident, formed during the process of drying, as I have failed to obtain it from the ripe undried hop; and a tincture of the undried hop, though decidedly bitter, lacks the aromatic flavor found in the tincture of the dried lupuline. For investigating this point, I was obliged to use the entire hop, in consequence of the impossibility of separating the lupuline from the scales of the undried hop. In making the tincture, however, I used the undried hop, in the proportion of six to one of the lupuline. I should observe, that the oil, by keeping, becomes resinified, and that the resin is of a yellowish color, different from that of the oil, when fresh distilled.

From the observations I have made on the action of the oil, I conclude that it is sedative and anodyne. It relieves pain without necessarily producing sleep. Large doses of lupuline reduce the frequency of the pulse from 20 to 30 beats in a minute, (and Dr. Maton lowered the pulse even 36 beats in the minute,) and finally bring on pain in the head, nausea, and loss of appetite. These effects are produced by the oil, whether inhaled or swallowed. In full doses it acts also somewhat as a diuretic; and I have seen good evidence of its power in diminishing and allaying the venereal appetite. On one occasion I took repeated doses of the lupuline for six hours, 10 grains every half-hour, or 120 grains in all, when the pulse became lower by 30 beats in the minute, and intermittent. This was accompanied by such an uncomfortable sensation of faintness, that I did not carry the experiment further. I made the trial with every care, at a period when I was free from disturbance. On another day, about 2 P.M., I inclosed myself in a room while lupuline was being distilled in an open retort. The peculiar smell of the oil soon pervaded the room. My pulse was then 84, and I felt quite well and comfortable; in half an hour my pulse was reduced 15 beats, and I had a violent pain in the head. I continued the inhalation another half-hour, when the pulse had fallen to 60, and was occasionally intermittent; the headache became insupportable, and I felt an inclination to vomit. I discontinued the inhalation, the pulse becoming regular, and of its usual rapidity, in about twenty minutes. The headache and nausea continued for nearly two hours. I afterwards passed a considerable quantity of clear urine, the reaction of which was acid, and of s. g. 1026, while that passed previously the same day, and that on the following day, was respectively 1019 and 1020. I could not, however, detect the smell of the oil either in the urine or the skin.

A man, employed in the operation of bagging or treading the dried hops into the pockets, told me that occasionally the smell of the hops made him so faint that he was obliged to go into the open air. He described his feelings as a faintness and dizziness; and seeing him on one of those occasions, I found his pulse slow and intermittent; and it is worth notice, that I have not heard of these effects being produced on those who are employed gathering the green hop in the hop-gardens. Besides the volatile oil, tannin, and extractive matter, lupuline contains a principle to which the name Humuline or Lupulite has been given; some writers have thought this to be the active ingredient of the hop, but I have never been able to satisfy myself that it possesses any sedative power. Its effects on the digestive organs are somewhat tonic. I have never observed from the humuline any of the symptoms produced by the oil. I have found much difficulty in obtaining sufficient humuline to make prolonged experiments; and my observations were made principally after the administration of lupuline, which had been deprived of its oil by distillation. I have never observed the effects of the oil produced. One day I took a strong decoction of lupuline, from which the oil had been distilled, and evaporated it. While this was progressing, I held my nostrils over the steam for half an hour. The smell was very different from that of the oil, being more pleasant, somewhat resembling that which is noticed in brewing. I observed no particular effect; certain it is that no nausea was produced. I have not succeeded in producing fatal effects on any of the lower animals by large doses, either of the oil or lupuline in substance. I administered as much as five drops of the former to a small terrier. I have, however, been told that a drove of ducks, a year or two ago, ate a large quantity of lupuline which had been swept from a hop-room into a poultry-yard, and that several of them died in consequence. It is also said that on hop-farms the lupuline has the property of making cows cast their calves, but I have never seen any parturient action from it on the human uterus.

With regard to the diseases in which lupuline may be given, I have prescribed it in a variety of cases with varying effects. It will be sufficient to give the general results of the cases, and not each one in detail. In diseases of the digestive organs, I have found it most useful in cases occurring in spirit drinkers, when there is tremulous tongue, loss of appetite, and excited manner. In pyrosis, it may advantageously be combined with bismuth, and in the dyspepsia of oxaluria, with the mineral acids. In some mild cases of gastralgia, it may be substituted with advantage for hydrocyanic acid. I have given it in several cases of articular rheumatism, without benefit, although Dr. Maton found its use beneficial in that disease. Three of five patients with sciatica expressed themselves relieved. In two cases of pleuritis it made no difference to the pain. In disorders of the nervous system, I have found its influence marked. One patient, (in a private lunatic asylum,) occasionally having epilectic seizures, and being in a highly nervous and excited state, begged for a dose of it nightly, after having once experienced its effects, as keeping away a "dreadful sensation," which prevented his sleeping, and was accompanied by incoherent muttering, of which the patient was himself unconscious. Two young ladies were seized with such pain as to cause them to scream loudly every few minutes. Dr. Evans, of Birmingham, who saw the patients in consultation, diagnosed the pain, which was seated in the abdomen, as hysterical; and after opium, morphia, camphor, and hyoscyamus had failed, and chloroform inhaled had only afforded partial benefit, prescribed lupuline, with positive and speedy relief to the symptoms.

A man aged forty-nine, a brass-founder, had suffered for two years from gradually increasing pain and tenderness on left side of the spinal column. When the pain was most acute, morphia internally gave but little relief, as also did the actual cautery applied over the spine; but he experienced decided benefit from repeated ten-grain doses of lupuline. A few weeks after, I heard that paralysis of the right leg had come on.

An elderly lady, the wife of a surgeon, was suffering from neuralgic pain in the back, of distressing severity of many days' continuance. She took henbane and tonics, used aconite and chloroform internally, without effect. Two or three doses of lupuline relieved her permanently. Four cases of chorea were not affected by its use. Lupuline, prescribed by Dr. Heslop, of Birmingham, for a lady with melancholia and loss of sleep, and in a similar case under Mr. Dufton, of Birmingham, had in both cases a decidedly satisfactory effect. Two cases of nymphomania seemed improved by its use; but as the patients were nearly idiotic, they were not very satisfactory subjects for observation. In some affections of the urino-genital organs, I can corroborate the favorable expressions of Zambaco and Hertsfelder. In five cases of slight spermatorrhœa and troublesome erections, it was of much service. One gentleman, who, though married and having children, was much troubled by nocturnal emissions, was free for many nights while taking lupuline. At the same time, I must in fairness state that Mr. L. Parker found it useless in a case in which he prescribed it. In several cases of painful erections in gonorrhœa, I have seen it serviceable; and it, as was observed in two cases of very chronic gleet, seemed to possess the power of abating the discharge; but in two cases of chordee, where there was decided curvature during erection, it proved useless. Dr. Heslop prescribed it nightly for a boy aged eight, who had had nocturnal enuresis since birth, and was admitted into the Queen's Hospital for modified variola, and after a week the disease was removed entirely.

Lupuline often removes the pain in back and chest accompanying simple leucorrhœa. I have also found it useful in one or two cases of ulceration of the os. It almost invariably relieves the pains in carcinoma uteri. I have found it do so in eleven cases, and in one of carcinomatous rectum: as also have Dr. Patterson, of Tiverton, in one case affecting the breast; Mr. Kite, of West Bromwich, in a similar case; and Dr. Bell Fletcher, of Birmingham, in several cases of cancer. In two cases of abortion, where the fœtus had been expelled, the separation of the placenta was not accelerated by its administration, though in each case this was speedily accomplished by a dose of ergot of rye. Lupuline completely relieved irritability of the bladder in two elderly females.

These are the conclusions I have arrived at with regard to the lupuline:—

1st. That it contains two distinct and different principles.

2d. That one of these, the oil, is a pure sedative and anodyne.

3d. That the other, which is probably humuline, has merely a tonic effect on the digestive organs.

4th. That the lupuline in substance may be given in very large doses, ten grains every half-hour, without producing dangerous effects.

5th. That the principal advantage it possesses over other anodynes in relieving the diseases above mentioned is, that, instead of diminishing the digestive power, it rather increases it. I would also remark, that its effects vary on different individuals, some requiring larger and more frequent doses than others, to produce the same results. In some the lupuline seems to lose its power after repeated administration.

I should remark, that the above notes being chiefly a record of my own observations, I have but slightly attended to the literature of the subject; at the same time, I am not unmindful of the merits of the justly celebrated men who have labored at the same subject as Drs. Maton, Ives, and Debout. Nor do I wish to take from them the credit of originality. With regard to its administration, I have used the lupuline in substance and in tincture, and I have tried a watery extract of lupuline, but found it inert, owing probably to the dissipation of the oil in the process of evaporation.

The tincture of lupuline I employ is of the proportion of one ounce and six drachms to half a pint of proof spirit. The ordinary dose I employed was one drachm, and the tincture is best made by percolation. If it is made by maceration, and the process continued long, or if the lupuline be old, the tincture becomes milky.

In general, I prefer giving the lupuline in substance, by placing ten grains on the tongue, and washing down with a little water; and this dose may be repeated every three or four hours if required, or the lupuline may be made into pills by manipulating it in a warm mortar.—*Edinburgh Medical Journal*, Feb. 1858.

SURGERY.

1. CASE OF IMPERFORATE ANUS. PROPOSED MODIFICATION IN OPERATIVE INTERFERENCE. By *Redfern Davies, M.R.C.S.*, Birmingham.—The surgical epoch in which congenital imperforate anus will cease to be regarded as an anatomical *lusus naturæ*, or as an opprobrium to the art and science of our profession, will arrive only when success shall uniformly crown our efforts. At present, how few, how extremely rare, are any recorded cases of individuals born with this deformity, and living! The pages of our own and of foreign journals, though occasionally relating some solitary instance of partial success, are wonderfully barren in any accurate details on the subject; indeed, whether as to anatomy, physiology, or treatment, since the writings of Amussat, nothing has been improved upon, little or nothing has been in fact done.

The rectum, and its terminal apparatus, the anus, is formed, as is well known, by the descent of the former in the pelvis, which in due time meets the anus and becomes incorporated with it; while simultaneously the membraneous septum, which before had closed the end of the gut, becomes absorbed, giving place to what will best be fitted for the performance of the coming functions of life. In either of these parts of the economy, or both at the same time, arrest of development may occur. It may be complete or partial—thus producing the various forms of imperforate anus which have been seen. Malformations are also due to disease in intra-uterine life. Cases are reported showing evidence of inflammation having existed within the rectum, (*rectitis,*) whereby the coats became adherent and the rectum impervious.

Anatomical characters of Imperforate Anus.

1st, and simplest form of arrested development, is when the anus and rectum are both normally formed, but the membraneous septum of fœtal life still exists between the two.

2d. *Malformations of the anus.*—Of these there are an almost infinite variety. The integument of the perineum may pass over the mucous membrane of the aperture from one side to the other, or only partially over it—producing more or less blocking up of the passage, and usually presenting a kind of tubercle on the surface through which passes the fæces.

The sphincter may or may not be present.

3d. *Malformations in the rectum.*—When the rectum does not descend low enough in the pelvis to meet with the anus, but terminates in some form of *cul de sac* at a variable distance from it.

When the rectum opens into a part of the surrounding viscera, viz. bladder, urethra, or vagina.

4th. Every possible variety of the preceding classes existing together.

CASE. *Past History.*—The mother of the child, a healthy primipara of twenty-eight years of age, was delivered of it at the full time, on December 19th, 1857. The child seemed, to all appearance, at birth, well and flourishing; but on the third day, no meconium having come away, the medical attendant elicited, in answer to his inquiries, that there existed some malformation about the child's bottom; which the nurse explained not having seen before owing to her bad sight. An imperforate anus was at once found to exist.

On being summoned in consultation, December 22d, by my friend, Dr. Cornelius Suckling, under whose care the child was, the following appearances presented:—

Present State.—A well-formed male child; seems weakly, but is tranquil. Urine quite clear, and made freely. On examining the perineum, no anal aperture is seen; the skin passes continuously from side to side; median raphé very marked and distinct. In the site of the anus the integument puts on a different color to adjacent parts; it is darker and has a peculiar appearance, simulating the usual anal wrinkles. On examining with the finger, and at the same time pressing upon the abdomen, or when the child cries, it is thought that in the direction of the rectum a fluctuation can be made out; the sensation is, however, by no means defined or certain. In all other directions an elastic, firm, resisting structure is evident. The bony outlines of the pelvis natural. The abdomen is bulging, hard, and tympanitic on percussion.

Diagnosis.—Absence of anus and of a portion of the rectum, probably from one to two inches. (Rectum does not open into viscera.)

Operation.—An incision—which, upon measurement, was found to be five-eighths of an inch—was commenced in the central line of the perineum, down to the coccyx, (in the part alluded to as marking the site of the anus.) Introducing the little finger, the sensation of the end of the rectum, though very distant, is now certain. Guided by that sensation, by the curve of the sacrum, and by the tuberosities of the ischium, the incision was carried by very gentle progression, cutting fibre by fibre, to a distance of two inches and a quarter, as was ascertained by actual measurement both at the time and afterwards. The extremity of the gut being satisfactorily recognized, an incision was made into it, and a grooved director pushed into the gut. An immediate escape of gas, which was very perceptible both to the ears and noses of the bystanders, as also by the welling out by the side of the director of meconium, announced that the rectum was opened. There was but very little loss of blood, estimated by the nurse as under a teaspoonful. A dose of castor-oil administered directly; a small oiled tent introduced into the wound; child put to bed.

Vespere, 10 P.M.—No more meconium has passed. Child seems easy.

December 23d, 10 A.M.—No meconium passed; child refuses the breast, seems fretful and ailing. On withdrawing the tent and introducing the finger into the wound, a few coagula are found at the top, closing the opening into the gut; on their being removed, a fresh escape of flatus and meconium, which now passes easily through the wound. He was ordered a purge of jalap.

Vespere, same day.—Child seems easy, but refuses nourishment; meconium comes away; urine clear.

December 24th.—Meconium and fæces come away easily. Child refuses nourishment.

Vespere.—About the same.

December 25th.—Died about noon.

Post-mortem.—Body of a dwindled appearance. Upon opening the cavity of the abdomen, no signs of peritoneal or inflammatory mischief could be anywhere traced; the contents appeared quite healthy, and the anatomical relations of the viscera as usual, save that there is a deficiency in the rectum, which is found to terminate in an infundibuliform *cul de sac* about the middle of the sacrum. Upon opening it, it is found to contain healthy fæces, and presents, about one-fourth of an inch posterior to the *cul de sac*, on its lower surface, an aperture three-eighths of an inch in diameter, through which a probe being introduced, passes out through the artificial anus in the perineum. The bladder is found quite natural. The rectum, as before said, terminated in a *cul de sac* of an infundibuliform shape, from which is prolonged, for about three-fourths of an inch, a fibrous cord. No muscular fibres could be found corresponding to the anus, though looked for, even by the microscope.

Remarks.—In the *Archives Générales* for the months of May, June, and July, in the past year, is a translation of an essay by Dr. Herman Friedberg, (*agrégé* to the Berlin Faculty of Medicine,) on Artificial Anus. The subject is discussed at length,—it is the most complete *resumé* of cases to be met with in any language; and, from the high character of the author of the paper, much weight is attached to his doctrines and practice. After commenting upon the advantage of an opening in the perinæum, as opposed to one in any other site, M. H. Friedberg goes on to say, that simple opening of the rectum through the perineum ought, in the present day, to be completely abandoned. "I do not know," he says, "a single case in which an opening by a trochar has preserved life permanently, when the closed extremity of the rectum has been distant from the normal site of the anus;" and, furthermore, he cites in corroboration of his opinion the words of M. Roser, who "has not found any detailed account, not even one, which tends to show that any decided improvement has been obtained by the employment of the trochar, when the rectum has been absent a distance of one inch." The operation that he strongly contends for is that of Amussat, viz. the bringing down the gut when an opening has been made in it, and stitching it to the outlet in the perineum. In support of this, he adduces two cases in which the rectum was distant one inch and a half and three inches respectively, (they, however, died, the one in six, and the other in nine months;) together with the four successes of Amussat, which, as Erichsen observes, singularly all occurred at Brest. Certainly, the Professor does not prove much by numbers. The advantages that he claims for it are beyond doubt good and substantial, viz. that there is a mucous membrane lining the whole tract of the canal; that the evacuations are more easily accomplished; that the natural tendency in canals not so provided to gradually contract, and finally become completely closed, is prevented; that the irritation and danger arising from the contact of effete matter with tissues not intended for such contact is also obviated. Against so formidable an array of arguments in favor of this line of conduct, the reasons that induced me, at the time when the rectum was opened, to forego even the attempt to bring it down, were, that I deemed the distance, two and a quarter inches, at which it was situated from the external opening, to be so great as to preclude the possibility of so doing. Bound down as the rectum is by its fold of peritoneum, the mesorectum, I feared to encounter the almost certain dangers of peritonitis, or pelvic cellulitis, which must inevitably be the probable consequence of the laceration of its connective tissue, to permit of its descent for such a distance. Besides, at such a depth, how great an uncertainty there must be as to what the forceps might seize hold of. A free outlet having been established, the exigencies of life were provided for, and the vital functions were, for the time, fully as well performed as they could have been even had the gut been brought down. So far the operation consisted in one of simple puncture; and had it been intended for it to remain as such, the somewhat violent and dogmatic fiats of the two German *savans*, quoted a few sentences back, would be, as I shall directly show, not absolutely justifiable. One case by Schleiss (in 1853) is narrated as successful; and up to the present hour its result has not been impugned. Another, where the rectum was absent about two and a half inches, I had the opportunity of witnessing while in Paris last year; the case was under the care of M. Maisonneuve, and presented to the Academie de Chirurgie, also reported in the *Gazette des Hôpitaux,—vide* Nos. 22 and 53, 1857. There is at present—aged some forty years—a gentleman in this town who was so operated upon, and who walks about, a living monument of its success. The fact, therefore, that in certain isolated cases a fortunate issue results, is certain; and it is also as certain that they are very, very much the exception to an all but universal law, that children born with imperforate anus die. To what, then, shall we attribute this result? The child is born, to all appearance, healthy, save this defect; which only kills by its mechanically preventing the exit of effete matter, and its attendant consequences. It would, therefore, appear that to overcome this difficulty would be to solve the question; and doubtless such will be the result when the operative procédé shall be improved, and so in proportion will lives be saved, save in those cases where the vital powers of the child are below par (as in part evidenced by the congenital deformity) and of themselves unequal to carry on life, much less when this embarrassment is added to them.

With all due deference, therefore, to the opinions of others, and in the hopes that it will receive whatever of attention it may merit at their hands, I beg to lay before the opinion of my more experienced professional brethren the following modification in the operative interference usually adopted in these cases, which I had intended, had the patient survived a sufficient length of time, to carry into effect. As far as can be judged by the evidence of the published cases, death is the consequence of different causes, according as the rectum is, or is not, brought to the opening of the wound. If it is, death ensues from the injuries inflicted by so doing. If it is not, death ensues, but secondarily, in consequence of the difficulty to defecation being only partially removed. I would propose, therefore, to combine these two procédés, and endeavor to obtain, by extending the operative measures over a considerable time, immunity from the evils of both: viz. supposing, in the first instance, that an opening had been made (as was done) into the rectum, nature being relieved, had not other influences intervened, the child would have lived *pro tem.;* but then comes into consideration the subsequent difficulty in passing the stool, owing to a gradually narrowing of the passage. All this is said to be due to the mucous membrane not being continuous with the outlet.

To remedy this, therefore, when the parts have recovered from the effects of the first operation, introduce a pair of forceps, and, seizing hold of the lips of the opening into the rectum, endeavor to bring it down, not by one vigorous and decisive holding on by the forceps, and by main force bringing the gut to the external orifice, but by gently and repeatedly soliciting its descent, introducing the forceps at certain intervals, and gradually endeavoring to accomplish the end. If the rectum can be so moved from its position, and be brought lower down in the pelvis (and so by repeated attempts it has been proved) by one forcible extension, and even that sometimes crowned by success, how much more likely is it that success should attend the proceeding when, by the almost imperceptible tractions made upon it, the great causes of failure, viz. peritonitis and pelvic cellulitis, would be removed, owing to the small amount of disturbance that would take place in the soft parts. Although, as far as I am aware, this procédé by successive stages has never before been broached in any writings on the subject, the idea was taken from a case reported in the *Lancet*, vol. i. p. 493, 1846, in which an incision was made into the perineum for a distance of three inches, and on the second day an attempt was made, by gently pulling, to draw down the gut, which was not, however, fastened to the external opening. One month afterwards the child was doing well.

I am fully aware that there is a vast deal of essential difference between this procédé and the one I advocate; nevertheless, accomplishing the end by successive stages, is in this case shadowed out, and will, I trust, assume a definite status in surgery."—*Edin. Med. Journ.*, March, 1858.

2. LARGE POPLITEAL ANEURISM TREATED BY PRESSURE, AND AFTERWARDS BY LIGATURE.—An interesting case of aneurism is now under Mr. Birkett's care at Guy's Hospital, which exemplifies a class in which the compression-plan often fails. For success, that method evidently requires a certain amount of vigor on the part of the patient, and of good coagulating power on the part of the blood. We have had to record many instances of failure in feeble, poor-blooded persons, and the following adds another to the list:—A laboring man, giving his age as thirty-six, but looking much older, was admitted with a very large popliteal aneurism in the right ham. He stated that he had continued at work until the previous day, and did not think that the tumor had existed for more than six weeks. The contents of the sac appeared to be wholly fluid blood. The pressure-treatment was commenced, and persevered in with some interruptions, for twelve days, but without producing any appreciable alteration in the contents of the sac. The integuments on the outer side of the tumor had, however, become discolored, and Mr. Birkett was apprehensive that ulceration of the sac was impending. It was accordingly determined not to delay longer the placing

of a ligature on the femoral artery. This was done at the usual site. The ligature came away on the ninth day, and the wound healed well. It is to be noticed that the diminution in bulk of the tumor appeared to be solely by absorption of fluid blood, and not by any process of solidification. The sac, indeed, although much smaller, is still soft, and contains much fluid blood. The man's general health has much improved since the operation.—*Medical Times and Gazette*, Jan. 30th, 1858.

3. MALIGNANT TUMOR NEAR THE BREAST AT AN UNUSUALLY EARLY AGE.—When malignant growths occur to persons young in years, it is well known that they are usually either of the medullary or melanotic form, very rarely scirrhous, and with still greater rarity epithelial. In some instances, however, and especially in or near the mammary gland, a form of very dense medullary is met with which approaches closely to the character of scirrhus. Of this the following is an example:—A delicate, pale-faced girl, aged twenty-three, unmarried, was admitted into St. Bartholomew's, under Mr. Lawrence's care, with a tumor the size of an egg situated in the outer and upper part of the left breast. The skin over it was ulcerated in several parts, and was tense, thin, and shining. Hemorrhage had several times occurred from the ulcerated spots. None of the axillary glands could be ascertained to be enlarged. There was no history of hereditary tendency to malignant diseases. She attributed the tumor to a blow she had received on the part about a year previously. Mr. Lawrence excised the mass, which was found not to be connected with the mammary gland itself. On making a section of it, its lower part was found of great firmness, almost as much so as if true scirrhus, while in its upper were several cysts, containing a bloody fluid. The wound slowly healed, and the woman's recovery was somewhat tedious.—*Ibid.*

4. EXCISION OF THE ANKLE-JOINT.—This operation was performed last week by Mr. Hussey, at the Radcliffe Infirmary, Oxford. The patient was a countryman, aged twenty-six, suffering from disease of the ankle-joint, the origin of which he attributed to a sprain. The malleoli, with the ends of the tibia and fibula, were removed with cutting pliers, and the articular surface of the astragalus was cut away with a gouge. No tendon was divided, and no vessel needed tying.—*Ibid.*

5. COLLODION AND CASTOR OIL AS AN ARTIFICIAL CUTICLE.—The mixture has been used of late with success in King's College Hospital, as an application to burns and abrasions, to form a sort of artificial cuticle. It has been used at the suggestion of Dr. Savage, at the Samaritan Hospital, in two cases of vesico-vaginal fistula, now there under the care of Mr. Spencer Wells. In one of these cases there is a recto-vaginal fistula also. In both the excoriation of the labia, perinæum, and thighs, from the constant dribbling of urine and the consequent smarting, has been very distressing. Extreme cleanliness, careful drying of the parts, and the use of simple ointment, afforded but little relief. The mixture of one part of collodion to two parts of castor oil was therefore used, and gave the most marked relief. It causes some smarting for a few minutes after its appli-

cation, but it then forms a smooth, elastic coating or varnish, which resists the action of the urine for many hours, and effectually protects the excoriated skin from the irritating fluid.—*Ibid.*

OBSTETRIC MEDICINE.

ON SECONDARY AFFECTIONS OF THE JOINTS IN PUERPERAL WOMEN. By *William Coulson, Esq.*, Surgeon to, and Lecturer on Surgery at, St. Mary's Hospital; and Consulting Surgeon to the City of London Lying-in Hospital.—Puerperal women are occasionally attacked by a severe form of disease attended by low fever, with effusion of pus into the joints, and almost always terminating in death. Various opinions are entertained respecting the nature and causes of this disease. My object in the following remarks is to show that it is connected with pyæmia.

The local affection occurs under two circumstances, viz. after delivery, at the full period of gestation or after abortion in the earlier months. It is important to include the latter kind of cases, which have not been sufficiently noticed, as they throw great light on the true nature of the disease, and dispose of the theory which would attribute the secondary affections to child-bed fever. The articular disease, as I shall presently show, is merely one of the effects of pyæmia; but it receives certain modifications from the puerperal condition with which it is associated. Even in puerperal women these secondary joint-affections may occur under several states which may be distinguished from each other. They are most commonly developed during the course of puerperal fever, from the third to the sixth day of the complaint. In other cases, they occur after convalescence from an attack of puerperal fever. Lastly, in some other cases they set in after parturition, without the patient having presented any symptoms of puerperal fever.

Although the articular affections are essentially the same under these different circumstances, it is useful to distinguish these circumstances, as they modify the general conditions which precede or accompany the local disease. Thus, when the symptoms of purulent infection of the blood are mixed up with those of true puerperal fever, we have a complex malady which has puzzled some of our best accoucheurs, and which, indeed, it would be impossible to understand, if the same affection did not sometimes occur in puerperal women without puerperal fever.

When the articular affection occurs during the course of puerperal fever, the following train of events is generally observed. For the first three or four days, the ordinary signs of puerperal fever are alone recognized; then some symptoms of phlebitis present themselves; or these symptoms may be so slight as to be overlooked. They are soon followed by a change in the condition of the patient. Severe rigors often usher in this change; the fever increases; the countenance is anxious and sallow; the respiration becomes hurried; there is irregular delirium; and the patient sinks.

In these cases, there are two dangerous maladies, viz. puerperal fever and purulent infection, running their course at the same time; and it is not to be wondered at if the general condition of the patient presents an anomalous appearance, or if it be rendered obscure by the predominance of one set of symptoms over the other.

In another set of cases, this obscurity does not exist. The patient has completely recovered from an attack of puerperal fever, or has not had any attack of that complaint; all the dangers of the puerperal state having apparently passed over. She goes on well for the first week or two; there is no fever; no abdominal pain; no apparent danger of any kind. Suddenly, a severe rigor sets in; this is followed by febrile symptoms, small quick pulse, &c.; or the attack may commence with local symptoms, the general disturbance being scarcely perceptible. These latter cases are very remarkable, and not long ago were mistaken for rheumatism.

The disease, with its local effects and constitutional symptoms, may occur after abortion in the early months. Here there are no symptoms of puerperal fever, properly so called; but there may be some slight symptoms of uterine phlebitis. These are often chronic and obscure cases; yet they proceed and terminate like the former series.

The secondary joint-affections are the same under all these different circumstances. They may be either purulent or non-purulent; articular or periarticular; acute or chronic. These different conditions are found to exist in various cases; but the most common form of attack is acute, of a purulent nature, and occupies the interior of the joint. At other times, though extremely acute, the attack is non-purulent, and confined to the exterior of the joint; while, in several cases, there is pus in the cavity of the joint, without any lesion of the articular tissues.

It is also worthy of remark, that in several cases some of the joints are attacked by purulent inflammation, while other joints in the same subject suffer from simple inflammation with effusion of serum.

The period at which the articular affection sets in is various. In a few cases, it has commenced on the second day after delivery; in many other cases, it does not appear until a few days before death, viz. from the twenty-third to the twenty-fifth day. Generally, however, the joints are attacked between the third and fourteenth days. The knee-joint is most frequently the seat of disease. I have found that it is attacked in one-third of the cases in which the joints have suffered; next comes the wrist-joint; then the ankle, the shoulder, elbow, hip; and, lastly, the smaller joints. In a few cases, the purulent effusion has been confined to the symphysis pubis; but I am inclined to think, from the history of these rare cases, that the suppuration of the pubic joint was primary, not secondary—the inflammatory action having extended from the cellular tissue of the pelvis.

The duration of the joint disease necessarily depends on the duration of the primary affection with which it is connected as an effect. It is not often prolonged beyond a week, but it may last from one to three weeks. In chronic cases the duration may extend to three months. I have published a remarkable case, where death took place on the sixty-fifth day after delivery, and on the fifty-fifth after the attack. Mr. Arnott also mentions a case which was prolonged for forty-four days; but no post-mortem appearances are given.

The local articular symptoms, and the changes discovered after death, present several varieties. In some cases there are no local signs of articular disease; even pain about the joint is absent. After death the cavity contains some pus; the articular tissues are quite healthy. These are exceptional cases. It is very rare not to find some one joint visibly affected, although the rest may have been the seat of passive suppuration.

The local disease commonly appears with the signs of synovial inflammation. The attack is always of an acute nature, commencing with pain more or less severe, which is quickly followed by swelling. The color of the skin remains unchanged, and the swelling is evidently caused by effusion of fluid within or round the joint. When the articular disease sets in, as is often the case, only a few days before death, it may continue with little change to the end; in other cases, the pain and tumefaction disappear altogether before death; or they may leave one joint to attack another.

It is, however, important to remark that, although the pain and swelling may somewhat subside, the disease never passes suddenly from one joint to another, as occurs in true rheumatism. Several large joints may suffer in succession; but, after death, we always find some lesions in or around the joint first attacked. In other cases some change in the color of the skin is found, superadded to the pain and swelling. The skin may be hot and red; it is often of a dusky-red color, especially about the knuckles and wrists. In many of these cases the affection is probably confined to the periarticular tissues; whereas, in ordinary diseases of the joints, the matter which surrounds the joint is derived from its cavity; in secondary diseases the pus hardly ever comes from the interior of the joint. I am acquainted with two cases only in which perforation of the cavity of the joint had taken place. These periarticular effusions, then, may be of two kinds. Sometimes the effusion is serous, and subsides to a considerable degree before death; or pus has been effused into the cellular tissue outside the joint, either with or without symptoms of local inflammation.

I am quite unable to determine the circumstances which give rise to these differences, or to explain why the effusion is purulent in some cases, serous in others; why it takes place now *in* the joint, at another time *outside* it. Moreover, the kind and seat of the effusion bear no relation to the gravity of the case, or to the intensity of the local symptoms.

The joint-affections are frequently accompanied by abscesses in the muscles of the legs and arms, preceded by pain and attended by doughy swellings. When these occur in puerperal women they should always excite attention, for they are too often the forerunner of purulent infection of the blood. The changes discovered after death are purulent effusion into the articular cavity without any alteration of tissue; frequently signs of synovial inflammation with erosion and ulceration of the cartilages; more frequently still purulent or serous infiltrations outside the joints, with abscesses in the neighboring muscles. In no case have the bones been found diseased; in no case, likewise, are the lesions confined to the joints; yet in a few cases the joints and intermuscular tissue have only been affected.

The other lesions are those of purulent infection, viz. secondary deposits in the lungs, liver, &c. The brain has not been found affected, as far as I am aware. Pus is always found either in the veins or lymphatics of the uterus; or there is primary abscess in the walls of the uterus, in the cellular tissue of the pelvis, in the symphysis pubis or elsewhere.

Practitioners are now agreed that the puerperal disease of the joints depends on blood-poisoning. The only question on which difference of opinion exists is as to the nature of the poison. Is it pus? Is it some morbid secretion or putrid element introduced into the blood? My own opinion is that these secondary joint-affections, as well as many others, are caused by purulent poisoning of the blood.

1. In the large majority of cases, purulent phlebitis of the parts originally affected has been observed after death. This holds good especially for cases which occur in connection with puerperal fever. The careful observations of M. Tonellé, at the Lying-in-Hospital in Paris, place the fact beyond doubt, and show that, although these secondary joint-affections and the general symptoms which accompany them never take place without having been preceded by primary suppuration, purulent phlebitis and primary suppuration of the cellular tissue do not necessarily give rise to them. The pus-poisoning and secondary deposits are an occasional, but not a constant effect of the phlebitis and primary abscesses. Thus, in two hundred and twenty-two post-mortem examinations of patients who died from puerperal fever, M. Tonellé found suppuration of the veins or lymphatics of the uterus in one hundred and thirty-four cases; yet of these, ten cases only furnished examples of secondary articular disease.

2. In many cases where pus has not been found in the uterine veins or lymphatics, it has been found in other tissues; and the very few cases related where no pus was found show either that the post-mortem examinations were imperfectly conducted, or that the temporary secretion of pus might have been fairly inferred from the symptoms during life.

3. The presence of vitiated and putrid secretions in the uterus does not account for the disease. It is not produced by retention of the placenta after abortion. It does not occur (unless phlebitis exists) in the form of puerperal fever, which is characterized by putrescence and softening of the uterus. It is not produced by the ingestion of putrid animal substances into the stomach.

4. The disease occasionally occurs in females without any of the accompanying circumstances of the puerperal state. Yet in its course, symptoms, and termination, it does not differ from the form which occasionally accompanies puerperal fever, the only modifications being those which arise from the presence or absence of the puerperal fever itself.

I do not deny the pernicious influence of vitiated secretions; but I maintain that all observation and analogy establish the doctrine that, unless these secretions excite purulent phlebitis, or give rise to primary deposits of pus in some of the tissues, they are not followed by the train of symptoms known under the name of pyæmia.—*British Med. Journ.*, March 6, 1858.

Editors' Table.

Medical Students in the United States during the Session of 1857-58.—We publish a list of the students and graduates of the different schools, which, although reliable, must necessarily be imperfect from the fact of our not being in possession of all the catalogues and circulars, anxious as we have been to obtain them:—

	Students.	Graduates.
Jefferson Medical College	501	209
University of Pennsylvania	435	145
University of New York	—	127
University of Nashville	353	109
University of Louisiana	276	68
Georgia Medical College	—	61
College of Physicians and Surgeons	—	53
St. Louis Medical College	125	49
Medical College of Ohio	—	43
Rush Medical College	100	36
Pennsylvania Medical College	140	35
New Orleans School of Medicine	126	33
New York Medical College	—	33
University of Louisville	—	31
University Medical College	—	27
Missouri Medical College	—	25
Memphis Medical College	—	19
Philadelphia College of Medicine	63	18
Massachusetts Medical College	—	16
Transylvania University	—	12
Oglethorpe Medical College	37	11
Kentucky School of Medicine	—	11
Starling Medical College	—	10
University of Buffalo	—	9
Medical Department of Yale College	—	6
Medical College of South Carolina	276	—
Richmond Medical College	60	—
University of Virginia	88	—

Students in Philadelphia.—From the above table it will be seen that there were 1139 students in Philadelphia during the past session. Of these 501 attended the Jefferson Medical College; 435 the University of Pennsylvania; 140 the Pennsylvania College; and 63 the Philadelphia College. The number of graduates in the same schools amounted to 407, viz. at the Jefferson College 209; at the University 145; at the Pennsylvania College 35; and at the Philadelphia College 18.

Medical Students Abroad.—In London, during the past session, the number of students was 1050. In Paris, 1027 took out inscriptions for 1857-58. In Dublin, the whole number was 573; and we find in the January number of the *Glasgow Medical Journal* that upward of 400 students were attending the classes at the University of Glasgow and Anderson's University; thus showing an increase over their last session.

Philadelphia College of Pharmacy.—During the session of 1857-58, the number of matriculates at this old and flourishing Institution was 90. At the commencement, held on the evening of 10th March, the degree of Graduate in Pharmacy was conferred on 31 gentlemen, and the valedictory address was delivered by that accomplished pharmaceutist and lecturer, Professor Wm. Proctor, Jr.

Resignations and Appointments in Medical Schools.—We have learned with profound regret that Dr. Miller, who had so long held the chair of Obstetric Medicine in the University of Louisville, has resigned his office. The announcement of his retirement will be received by the medical profession throughout the country with sorrow, especially in the Southwest, where he is so well known and so justly appreciated for his many excellent qualities as a man, a practitioner, and a teacher. Connected with the Institution from its earliest inception, no one who has ever been associated with it has worked harder, more faithfully, or more successfully for the promotion of its prosperity. We sincerely hope that the Trustees and Alumni of the School will make an effort to recall him to a post which he has filled with so much ability, and in which no one, in all the Southwest, can replace him. Experience comes not in a day, nor is reputation attained without toil.

Professor R. K. Thomas, in consequence of ill-health, has resigned the chair of Obstetrics in the University of Maryland, which he held for some years. His successor is Dr. G. W. Miltenberger, formerly Professor of Materia Medica and Therapeutics in the same institution. To the chair thus vacated Dr. Charles Frick has been appointed, and we are sure no better selection could possibly have been made. We know Dr. Frick well, and, independently of his many excellent social qualities, there is no man of his age in the country who is better qualified for such a chair.

Dr. Joseph Jones, recently Professor of Chemistry in the University of Georgia, has been appointed to the chair of Chemistry and Pharmacy in the Medical College at Augusta, rendered vacant by the retirement of Professor Means. This gentleman, although but a recent graduate of medicine, is already favorably known to the profession by his excellent contributions to chemical and physiological science. These contributions, founded as they are upon laborious personal observation, have achieved for Dr. Jones a high position in the profession, and augur for him a most brilliant career. We congratulate the medical faculty at Augusta upon the acquisition to their corps of so devoted a student and able investigator.

THE MEDICAL AND SURGICAL REPORTER.—We learn that this journal, now well known to the profession, will hereafter be issued at Philadelphia, and that its talented editor has associated with him Dr. Atkinson, who has for some time been a contributor to its pages.

JOURNAL DE LA PHYSIOLOGIE DE L'HOMME ET DES ANIMAUX.—We take great pleasure in announcing the receipt of the first number of this journal, edited by Dr. E. Brown-Séquard, which contains 216 pages, more than three-fourths of which are devoted to original articles. These are thirteen in number, six of which are contributed by Dr. Brown-Séquard himself. An article on Digestion, from the pen of Dr. Francis G. Smith, of this city, which was published in the *Medical Examiner* more than a year since, has been translated, and finds a place in the original matter. Also an article on the transformation of starch into glucose in the stomach, by Drs. F. G. Smith and Brown-Séquard. We hope to be able to give selections from, or translations of, the most interesting articles as they appear from time to time.

AMERICAN MEDICAL ASSOCIATION.—The next meeting of this body will take place at Washington City on the first Tuesday in May. A larger attendance than usual is expected.

AMERICAN VETERINARY JOURNAL.—This journal, which is now in its fourth volume, is edited by Mr. George H.

Dadd, of Boston, and is issued once a month at one dollar per annum. It is devoted to the diffusion of veterinary knowledge throughout the United States, and deserves a place upon the table of every physician who is the owner of a horse, the daily companion of his professional life, and the necessary creature of his comfort. Dr. Dadd is a gentleman of great ability, and is well known to the country by his various scientific treatises upon the anatomy, physiology, and diseases of the horse. He received his education in the great veterinary school near Paris, conducted by men of superior ability and attainment, whose labors and researches have reflected much light upon human medicine. There is much need of such institutions in various parts of our own country, and of the rearing of men who shall be able to treat the diseases of the inferior animals upon proper scientific principles. Many years ago we felt a deep interest upon the subject, and went to Frankfort, Kentucky, especially for the purpose of calling the attention of the State Medical Society to it, in the hope that it would exert some influence with the profession and the public throughout the State, for the purpose of procuring the establishment of a veterinary school at the Capital; but the meeting was a failure, and nothing was done. Since then we have often thought about the matter, and it was, therefore, with no ordinary gratification that we learned, some time ago, that Dr. Dadd was at the head of such an institution at Boston. We consider that every physician who rides or drives a horse should know something of the maladies to which he is subject, and we are strongly inclined to the opinion that a man who takes no interest in the welfare of such an animal—often more noble and sagacious than the beast that bestrides his back—is neither a gentleman nor a Christian.

THE ECRASEUR IN OVARIOTOMY.—Dr. John L. Atlee, of Lancaster, Pa., on the 23d of March, removed a large multilocular ovarian tumor from a lady sixty-one years of age, by means of the écraseur. He cast the instrument around the pedicle, which was one inch in length by four in breadth, and highly vascular, and succeeded in removing it in six minutes and a half without the loss of a drop of blood. The external wound was closed by silver sutures, and the woman made a rapid recovery.

A full report of the case will appear in the next number of this journal.

ACCIDENTS OF KNIGHTHOOD.—We copy, without vouching for its authenticity, the subjoined paragraph from *The Press* of this city, respecting the manner in which Sir Philip Crampton, the celebrated Irish surgeon, now far advanced in years, received the honors of knighthood.

"George IV. visited Ireland in 1821, at which time Philip Crampton was Surgeon-General of the forces. He attended the King's *levée*, and wore the proper official uniform of his station, blue, with gold lace, epaulets, sword, and plumed cocked hat. This attire resembled that of a General of Artillery, and Crampton, who was over six feet high, and one of the handsomest men in Ireland at that time, looked remarkably well in it. His appearance struck the King, who made a remark to Lord Norbury, 'Fine man! General officer? in what branch of the service?' Norbury, who was a better courtier than to insinuate that royalty possibly could be mistaken, and too witty to sacrifice the opportunity of making a pun on Crampton's profession, answered, 'His name is Crampton, may it please your Majesty, and he is a General in the *Lancers*.'"

APPOINTMENT OF PROFESSOR DICKSON.—It affords us much pleasure to announce that, at a meeting of the Trustees of Jefferson Medical College, on the 27th instant, Dr. SAMUEL H. DICKSON, of Charleston, South Carolina, was appointed as the successor to the lamented Mitchell in this Institution. The high reputation of Dr. Dickson, as an able lecturer, a finished writer, and an accomplished gentleman, are too well known to require any comment.

NECROLOGICAL NOTICES.

DEATH OF PROFESSOR MITCHELL.—It is our painful duty to announce the death of Dr. John K. Mitchell, Professor of Medicine in Jefferson Medical College. It took place at his residence in this city, on the evening of the 4th instant, in consequence of an attack of pleuro-pneumonia of only one week's duration. His illness was very sudden, and the news of the fatal event cast a gloom over the whole community, as we doubt not it will over the whole profession of the United States. Several years ago, Dr. Mitchell had an apoplectic seizure, from which, although it was followed by partial paralysis that continued down to the time of his death, he yet sufficiently recovered to enable him to deliver, with his accustomed ability, his annual courses of lectures, with hardly any interruption. During the last winter, indeed, his health was so good that he was obliged to absent himself from his class only on a single occasion.

This is neither the time nor the place to present a biography of the lamented deceased. This melancholy duty has been already assigned, as will be perceived by the subjoined resolutions of the Faculty of Jefferson Medical College, to other hands, and we cannot doubt that it will be executed with becoming taste, judgment, and fidelity. We cannot, however, forbear adding a few remarks respecting the most prominent features of his career.

Dr. Mitchell was a native of Virginia, having been born at Shepherdstown, in that State, on the 12th of May, 1793. He was, consequently, at the time of his death, nearly sixty-five years of age. His father was a Scotch physician, who emigrated to this country toward the close of the last century, and died before his son, who was destined to shed so much lustre upon his name, had attained his ninth year. At the age of fourteen young Mitchell, left with a small patrimony, to the care of a guardian, was sent to the village of Ayr, in Scotland, to receive his academical education. After a sojourn there of several years, he was transferred to the University of Edinburgh, then in the zenith of its renown as a literary and scientific institution, and while there he had the good fortune to make the acquaintance of Jeffry, Wilson, and other men, who subsequently performed so brilliant a part in Scottish literature. Returning to his native country in 1816, he studied medicine under Dr. Kramer, of Virginia, and afterward under Professor Chapman of this city, attending at the same time a course of lectures in the University of Pennsylvania. His health, however, failing him, he was advised to make a voyage to China, and he repeated his visit to that country after he took his degree in 1820. Settling in

Philadelphia, he became a candidate for business, published a small volume of poems, and in 1822 was appointed physician to the Philadelphia Alms House, a position which he resigned six years after for the same office in the Pennsylvania Hospital. Prior to this period he was already engaged in teaching chemistry, a lectureship having been tendered him in the Medical Institute of this city, founded by his illustrious preceptor, Dr. Chapman, between whom and himself there always existed a warm personal friendship, which only ceased with the death of the former in 1853. It was here, while associated with such men as Jackson, Hodge, John Bell, and others of a similar character, that Mitchell performed his series of valuable experiments upon the "Penetration of Gases," a subject of great physiological interest, and which, until then, had hardly received any attention either in Europe or in this country. The results of these experiments were embodied in a paper which he published in the *American Journal of the Medical Sciences*, and which elicited at once the notice of the learned in both hemispheres.

In 1841, Dr. Mitchell was appointed Professor of Medicine in Jefferson Medical College, a position in which he shone to peculiar advantage, for it afforded him, for the first time in his professional life, an opportunity for the full display of his rich and varied talents as a public teacher. The school, hitherto depressed by adverse circumstances, rapidly rose into distinction, and to Mitchell and his associates belonged the credit of having lectured, at one time, to the largest medical classes that had ever been assembled anywhere in the world. His presence in the lecture-room was peculiarly pleasing and captivating; his sweet, melodious voice, his manly appearance, his agreeable manners, his apt illustrations, and his ready anecdotes, rendered him one of the most attractive of teachers; while, personally, he enjoyed universal popularity with his pupils.

Early in life, Dr. Mitchell was a copious contributor to the medical press of this city, especially to the *North American Medical and Surgical Journal*, whose pages bore frequent evidence of his erudition and scientific attainment. All his papers were characterized by grace of diction, accuracy of narration, and an easy flow of language, which served to impart to them a charm seldom seen in similar writings. We believe he never attempted the composition of any elaborate systematic work. About ten years ago he published a monograph on the "Cryptogamous Origin of Malarial Fever," which attracted much attention at the time, on account of its ingenious reasonings and argumentations. For many years he enjoyed a large and lucrative practice.

Dr. Mitchell possessed a mind eminently poetical and susceptible of the beautiful. Whatever was lovely in nature was sure to attract his attention, and become the subject of comment. His studies were not purely professional, although these claimed much of his consideration, but they embraced almost every topic in literature, the arts, and sciences, upon all of which he conversed agreeably and intelligently. Of an eminently social disposition, he was the charm alike of the social circle and of the festive board, at which he not unfrequently presided on public occasions. Courteous and affable in his manners, he was one of the most popular of men and physicians; an excellent husband, an affectionate, judicious father, a devoted friend, a virtuous citizen. He has left behind him a wife and six children, of whom Dr. S. Weir Mitchell bids fair to transmit his father's name and fame with undiminished lustre.

The following is a minute of the action taken by the Faculty of Jefferson Medical College, soon after the death of their late colleague, the Dean, Professor Dunglison, being appointed under the second resolution :—

"The Faculty of Jefferson Medical College, on the occasion of the decease of their distinguished colleague, Professor J. K. Mitchell, are desirous of recording their estimate of his rare qualities as a professor and an associate.

"Ever since the reorganization of the school, in the year 1841, Professor Mitchell took a zealous and active part in its management, and in the important instruction delivered therein; and it may be safely affirmed, that in his anxiety and well-directed efforts for the best interests of the Institution, and of the vast number of pupils who have flocked to its halls, he has been exceeded by no one.

"As an associate, his deportment to his brethren of the Faculty was ever courteous and conciliatory; and in the numerous acts which led to the unprecedented success and development of the school, he participated largely, energetically, and ably. The loss of one so admirably qualified for his responsible office as a professor, of an associate so endeared, is, indeed, most profoundly mourned by his colleagues.

"*Resolved*, That an obituary notice of the deceased be delivered before the class of next session by one of his colleagues.

"*Resolved*, That a copy of the above minute be communicated to the family of their late friend and colleague, with assurances of the heartfelt sympathy of the Faculty in the grievous affliction which has befallen them."

THE LATE MR. TRAVERS.—Our London Exchanges bring us the news of the death of Benjamin Travers, Esq., F.R.S., for many years one of the most active and distinguished surgeons of Great Britain. It took place on the 6th of March, in the seventy-fifth year of his age, having been in the practice of his profession for upward of half a century. Mr. Travers was a pupil of the late Sir Astley Cooper, and at the time of his death was Serjeant-Surgeon to her Majesty Queen Victoria, having been appointed to this office only a few weeks before his demise. He was the author of a number of works, the first of which was published while he was Demonstrator of Anatomy at Guy's Hospital in 1812, under the title of *An Inquiry into the Process of Nature in Repairing Wounds of the Intestines.* This work gave him at once a high position in the profession, and was, for a long time, the only treatise on the subject in the English language. Subsequently he published, along with Sir Astley Cooper, a volume of essays on various surgical subjects. In 1818 he issued a work upon diseases of the eye, founded mainly upon personal observation at the Royal London Ophthalmic Hospital, and which was soon after republished in this country, with notes by Dr. Delafield, of New York. His last literary production, we believe, was his work upon *Inflammation*, published nearly twenty years ago. This work, which was extensively circulated both in Europe and this country, had the effect of calling attention to a subject which had, until then, been too much neglected. He also contributed numerous papers to periodical medical literature, especially to the Transactions of the Medico-Chirurgical Society of London. In 1816 he was elected one of the Surgeons to St. Bartholomew's Hospital, a situation which he retained for many years. Mr. Travers has left a worthy representative in his son, Benjamin Travers, Esq., Jr., already a man of professional distinction.

Dr. J. K. WALTHER, one of the oldest and most distinguished members of the University of Leipzig, died on the 4th of March, at an advanced age. He was the author of a number of works upon surgery, among others, one on Crural Hernia, which made his name universally known to scientific men.

THE eminent Hungarian physician, Dr. SCHŒPF MEREI, died on the 12th of March, in the fifty-fourth year of his age. He was Professor of the History of Medicine in the University of Pesth, and the founder of the Children's Hospital of that city; one of the first institutions of its kind in Europe. He enjoyed a large practice, and was regarded as one of the first medical men in Hungary. He was possessed of varied and extensive literary acquirements, and spoke with great fluency many of the languages of Europe.

MILITARY surgery in France has lately sustained a severe loss in the death of MONS. L. BAUDENS, which took place at Paris on the 27th of January last, in consequence of cancer of the liver. He was the author of an excellent work on Gunshot Wounds, published in 1836; served with great distinction in the Crimean war, and held, at the time of his demise, the office of one of the chief Medical Inspectors of the French army.

THE news of the death of Dr. FORBES ROYLE will be received with regret in this country, where his work on Materia Medica made his name well known to the profession. He was a graduate in medicine of the University of Munich, a Fellow of the Royal Society of London, and formerly Professor of Materia Medica at King's College. Early in life he practiced in India, with whose material resources, especially those of the vegetable kingdom, he is said to have been very familiar.

Bi-Monthly Bibliographical Record.

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Analytical and Critical Reviews.

Art. I.—*Lectures on the Diseases of Women.* By Charles West, M.D., Physician-Accoucheur to St. Bartholomew's Hospital, and Physician to the Hospital for Sick Children. Part I: Diseases of the Uterus. Philadelphia: Blanchard & Lea, 1857.

We confess a decided preference for courses of lectures, as a form of elementary books, upon all the clinical branches of medicine. Something may be sacrificed in the way of methodical detail; it may not allow of that completeness necessary to exhaust a subject: but, on the other hand, the reader seems to be brought into closer relation with the writer, more into the position of a hearer; he is more easily carried step by step into the subject; his attention is better fixed, his mind less easily fatigued, and special points of diagnosis, pathology, or treatment, are more strongly impressed upon his memory.

The author, to whose work we now call attention, is well known as a successful writer in this style; his course of lectures upon the *Diseases of Infancy and Childhood* has long been before the medical public of this country, and has met with that favor to which its merits entitle it. As a writer, Dr. West stands, in our opinion, second only to Watson, the "Macaulay of Medicine;" he possesses that happy faculty of clothing instruction in easy garments; combining pleasure with profit, he leads his pupils, in spite of the ancient proverb, along a royal road to learning.

A work upon diseases of women was to be expected from his pen; indeed, in presenting it he has but fulfilled a duty he owed to the profession. We do not mean to intimate that we receive his work thanklessly, but to say, that, having shown such abilities as a writer on diseases of children, he was in duty bound to continue his labors, and, in practice, the diseases of women stand in close relation to those of children; that if the investment of his talents in the Children's Hospital produced such rich returns, the profession has a right to expect, from his position at St. Bartholomew's, a harvest as much more abundant as the field of cultivation is larger. There is no similarity between the two institutions,—the Children's Hospital of London is but a small establishment, comparing very unfavorably with similar hospitals on the continent, and unworthy of a city which is probably unequalled in the extent of its public charities; but St. Bartholomew's is one of the oldest, largest, and richest hospitals of the British metropolis, an unbounded field in which to pursue any branch of medical research.

The position of the author in relation to the many questions still undecided in the pathology and treatment of female diseases, may claim a moment's attention before proceeding to a consideration of the work itself. To some it may seem surprising that there are so many disputed points and such wide differences of opinion upon a class of diseases some of which are daily under our observation; but such surprise must cease when we reflect how lately the greater part of our knowledge, not only of the diseases, but of the anatomy and physiology of the female sexual organs, has been attained; in the rapid advance of a science some will be left behind, and those who keep up will find themselves occupied in entirely different ground from that on which they stood but a short time previous. There is nothing, then, surprising in these differences: from the doctrine that an organ of such dense structure as the uterus could not be liable to inflammation, it was natural that opinion should pass to the other extreme, of considering it one of the most frequent and most important uterine diseases; from entire ignorance of the influence of the ovaries on menstruation, it was not surprising that all irregularities of this function should be attributed to them as soon as their importance in the economy became known; from the increased knowledge gained by means of the speculum, it was to be expected that some would find no possibility of treating uterine diseases without it. Again, simplicity in medicine is exceedingly tempting; any theory which will easily explain all deviations from health is sure to find believers; any mode of treatment which cures many ailments by a single method will certainly find followers. The department of female diseases had its full share of these theories and these modes of treatment, while time enough has not yet elapsed to prove the truth or value of each. In attaining this end, in separating the good of every novelty from the bad and the indifferent, in placing a true estimate upon new modes of treatment, we look upon the work before us as a valuable aid. He is evidently no partisan; has no case to make out on one side of a question or the other; you feel, as you read, that facts are not made to bend to any preconceived theory of the writer's; that he has no prejudice to satisfy when treating of views and opinions with which he cannot agree. He does not merely give a dogmatical opinion upon questions at issue, but gives facts to support it, and the grounds of his decision in full; he states the arguments of his opponents with most scrupulous fairness, and bears cheerful testimony to any improvements which they may have originated. His work is one which will not satisfy the extreme on either side, but it is one that will please the great majority who are seeking truth, and one that will convince the student that he has committed himself to a candid, safe, and valuable guide.

The first two lectures of the work are introductory, upon the symptoms of diseases of women in general, and the modes of examination necessary in investigating them. The three ways in which these diseases manifest themselves are by "causing disturbance of function, alteration of sensibility, or change of structure," and the consideration of these points occupies most of these two lectures. The modes of examination bring us at once upon a question of dispute—the value of the uterine sound as a means of diagnosis—and afford an instance of some of those characteristics we have already mentioned, the value of this instrument being one of the many points upon which opinions are divided,—some believing it an invaluable addition to our means of diagnosis, others having no belief in its merits but great fear of the dangers attending its use. The latter is the opinion of so eminent a man as Scanzoni. Dr. West says,—

> "The information which this instrument places within our reach is often extremely valuable, and of a kind such as otherwise we could not obtain at all, or could arrive at only very slowly, and by frequently repeated examinations. If in a patient suffering from frequent hemorrhages we ascertain the uterine cavity to be greatly increased in size, our immediate conclusion is that the womb contains some foreign body, as a polypus or fibrous tumor, the presence of which has excited, and serves to keep up the bleeding. If we doubt whether a tumor proceeds from the womb or its appendages, or from some other part within the pelvis, the sound enables us to estimate the weight of the organ, and so strengthen the inference drawn from this experiment, by completely isolating the womb from the tumor, and thus ascertaining positively their independence of each other. Or, lastly, if the uterus be bent upon itself either forward or backward, the diagnosis of this condition, which once was a matter of much difficulty, is now arrived at with facility; by introducing the sound with its concavity directed toward the swelling we detect it per vaginam, and observing whether or not this swelling disappears on turning round the instrument. * * * I shall hereafter have to refer on many occasions to this valuable aid to diagnosis. The uterine sound, indeed, is not always applicable, nor does it when

used always clear up our doubts; but I do not remember any instance in which a diagnosis, based on the information which it afforded, turned out afterwards to be erroneous."

His remarks are equally judicious in regard to the merits of the speculum, an instrument which has been much abused, in two senses of the word. He neither denounces it nor lauds it, but acknowledges that we owe much of the progress which has been made in uterine pathology to those who were not content with the means of investigating uterine disease previous to its discovery; not all, however, part of it being due to the impulse it gave to the study of the subject.

> " * * * The speculum enables us in many instances to decide at once, and with certainty, upon the nature of a case, which otherwise we should have understood only after long and careful watching, to discover some minute polypus which fingers alone would not have detected, to determine the source of a profuse leucorrhœal discharge, and to decide whether it is furnished by the cavity of the womb or the walls of the vagina; or, from the redness, congestion, or abrasion of the os uteri, to infer the state of the womb generally, and thus to conduct our treatment upon the sure ground of positive observation, not upon bare presumptions. At the same time, however, that I hold the speculum to be in many cases of most essential service, I think that the endeavor of all of us should be to ascertain the minimum of frequency with which its employment is necessary. This is to be done not by decrying the instrument, still less by attributing dishonest motives to those who use it, but by soberly and honestly trying to test the value of the information which we derive from it, and learning to discriminate between those appearances which the speculum discloses that are of moment and such as are of no importance."

The three following lectures are upon the disorders of menstruation,—a subject upon which there is little new, as, indeed, but little could be expected. Still, there are some points deserving notice, and all these disorders are considered at length, and in a plain, practical manner, which leaves little to be desired as a guide to practice. Amenorrhœa from malformation of the sexual organs, is stated to be very much more rare than would be presumed from the attention which has been bestowed upon the subject by writers. Absence of the ovaries is rather to be presumed than proved during life; the author has seen only two cases where there was reason to suspect some defect of development of these organs. He has also seen but one case of absence of the uterus, and not one where the menstrual flow was prevented by occlusion of the os or vagina; such cases, he thinks, must be extremely rare. Passing on to the cases demanding the physician's rather than the surgeon's care, he takes pains to impress the fact that postponement of the appearance of the menses does not warrant treatment, and need not occasion anxiety,—a certain amount of variety being observable in regard to this function, as well as to some others, while a serious illness just before the critical age always delays it; he also shows that its establishment is generally *gradual*, presenting in this particular a striking resemblance to dentition, and that the periodically recurring leucorrhœa—the *menstruæ albæ* of old writers—is not abnormal. But after all these cases are deducted there yet remain "a number of instances where the non-accomplishment of the menstrual process, at the time when the changes of puberty are usually completed, is the prominent symptom of disordered health, and seems to be the chief occasion of all the various forms of illness with which it may be associated." These are divided into two classes, according to the symptoms of plethora or anemia which accompany them,—the former, however, having a strong tendency to pass speedily into the latter,—a saving clause, which probably explains why we so rarely meet with it in practice. We cannot follow the author through his very excellent description of these different forms of disease: the connection between the local and constitutional disease, the establishment of vicarious hemorrhage and of chlorosis; nor is there much in the treatment to detain us. He lays down the principle very plainly, that "when no sign of menstrual effort shows itself, then no local measures are indicated;" and shows that he does not believe health alone to be found in the preparations of Apothecaries' Hall.

> "In cases where general debility characterizes the patient's condition, tonics, in the widest sense of the term, are indicated; and by them I understand not merely tonic medicines, or preparations of iron, although they will almost always be appropriate, but the tonic influence of pure air, healthful pursuits, and exercise short of fatigue."

In cases where there is a distinct effort at menstruation, after the general health has received due attention, special treatment may be commenced. All harsh and violent remedies are opposed; he follows only those measures which can do no injury, and rejects highly stimulating general and local remedies, such as savin, turpentine, and cantharides, or injections of liq. ammon. in milk, or the application of nitrate of silver by a *porte-caustique*. Benefit has been found from electricity in some instances, but it is an uncertain remedy; and ergot does not seem to have any power except on the muscular structure of the uterus.

In connection with these cases, as well as in the treatment of suppressed menstruation, the influence of habit is a point which the physician should constantly bear in mind; but it is rarely, indeed, that he can have the opportunity of superintending the establishment of the function, and by following a course of treatment month after month during the menstrual period, see that the flow is not only regular in its occurrence, but natural in other respects; unless actual disease of some severity be present, the physician is not consulted, and thus, as our author states, a habit of painful, scanty, or profuse menstruation is fixed for life.

We are very glad to forsake the old division of the subject of menorrhagia for one which we think far more scientific, as it is more simple: viz. according as it depends, "1st, on some cause seated in the constitution generally; 2d, on some affection of the sexual system." To distinguish to which of these classes a given case belongs, is of the highest importance in regard to treatment, as sometimes the disease is but the local sign of a grave constitutional ailment, and sometimes the symptom of organic uterine affection. As an instance of the former we quote the following:—

> "Cases are sometimes met with in which an altered state of the circulating fluid, such as even our rough chemistry can detect, coexists with and appears to be the exciting cause of menorrhagia. In cases of granular degeneration of the kidneys, menorrhagia is far from being an uncommon occurrence. The altered, attenuated blood seems to escape more readily than natural from the uterine vessels, when they are congested at the return of a menstrual period; and three or four cases of supposed disease of the womb have come under my notice, in which the most careful examination could detect no local cause for the profuse menstruation, but in which the urine was discovered to be loaded with albumen. The hint which this fact suggests as to the expediency of examining the urine, even though no symptoms should seem to point to the existence of renal disease, is worth remembering, and the test-tube will help to clear up many an obscure case of supposed uterine ailment. You are not to be specialists, even though chance should lead you to have most to do with one special class of ailments, but you are to be physicians, and in proportion as you learn to estimate aright the influence of the disorders of one part upon the functions of another, will you be likely to prove good and successful practitioners in the treatment even of local diseases."

Whatever may have been the origin of the diseases, there are always two indications to be fulfilled: arrest of the present hemorrhage, and removal of the cause. The measures necessary to effect the latter must, of course, vary widely according to the case, and for the former we need only give the opinions we find expressed upon a few special remedies; as emanating from a practical and experienced man they are of value. The general course of treatment necessary having been pursued, there are four astringent remedies to which he resorts,—alum, gallic acid, acetate of lead, and matico. Of these the second and last are but little used in this country, so far as we know; they are not generally procurable, while the lead is a remedy which we believe to be most frequently resorted to and relied upon. His opinion of their relative merits is as follows:—

> "Of the four remedies which I have just mentioned, the gallic acid and the matico are those in which I have the greatest confidence, while I place the least reliance on the acetate of lead. I do not know, however, of any special indica-

tion by which we can judge beforehand of the probability of one or the other remedy proving especially applicable in any particular case, but am accustomed to employ each in succession, provided one should fail to produce the desired effect."

It may be well to mention that he gives a formula for the exhibition of lead in a liquid form, and in his work on *Diseases of Children* he expresses a preference for this mode of administering the remedy.

In regard to ergot, the author states that he has not been able to discover that it possesses any virtues in controlling uterine hemorrhage, independent of that which it exerts in producing muscular contractions of the organ; he prefers the infusion to all other preparations of the drug. The use of digitalis as a remedy in this disease is alluded to, but he has had no experience with it; he gives the opinion of Dr. Lee, who has employed it extensively, and believes that it is as powerful and certain in controlling hemorrhage from the uterus, as ergot is in exciting the muscular contractions of that organ. We regret that we do not find any mention of Indian hemp (*Cannabis Indica*) in this disease; it is attracting attention, and is highly spoken of by Churchill in the last edition of his *Theory and Practice of Midwifery*, London, 1855.

Under the head of dysmenorrhœa we find described the neuralgic, mechanical, and congestive, with rheumatic and membranous as allied to the latter. Especial pains are taken to impress the fact that progress in anatomical knowledge has entirely done away with the notion that this membrane is a product of inflammation; its production depends only on an exaggeration of the process which normally takes place, and it thus furnishes another instance of the narrow line which separates the domains of pathology from those of physiology. The author is almost as skeptical in regard to dysmenorrhœa depending upon mechanical causes as amenorrhœa; he has seen one case where the canal was narrowed, and in which the suffering commenced after a labor some years before; he believes that generally an undeveloped condition of the organ is the true cause of the narrowed canal. There are some remarks upon this subject too practical and interesting to pass by.

> "An impression has, of late years, been gaining ground, that this form of dysmenorrhœa is very common, and mechanical means of treating it have accordingly come very much into vogue, to the neglect, it is to be feared, in many instances, of those internal remedies by which painful menstruation is in general much more appropriately treated. One circumstance, which I believe to have much contributed to the support of this opinion, is the fact that, on introducing the uterine sound, an obstacle is very often encountered at the internal os uteri to the passage of the instrument into the cavity of the womb. That this obstacle is, however, perfectly natural, can be readily ascertained in the dead subject, since even after the removal of the uterus from the body, a bougie which

passes with ease along the cervical canal will then encounter a resistance such as can often be overcome only by considerable effort, or perhaps not at all, though a smaller bougie will pass at once with perfect facility, and the uterus, when laid open, will be found to be perfectly healthy. The constriction in this situation, which is found to be so considerable even after death, was, doubtless, in these and many other instances far more considerable during life, and yet in spite of it the history of such persons often gives no account of difficult or painful menstruation. Nor, indeed, need this surprise us, for the discharge takes place, during menstruation, not in a continuous stream as the urine flows from the bladder, but oozes from the interior of the womb, the blood escaping drop by drop from the os uteri. If the aperture be so small as scarcely to allow this to take place, menstruation, no doubt, may be rendered very painful; and just as when stricture of the urethra exists, the bladder and ureters and kidneys become irritated and disturbed in the performance of their functions, so it is quite conceivable that a similar state of the cervix uteri may exert the same influence on the function of that organ, and render the menstrual flux scanty in quantity and morbid in character, as a consequence of the difficulty in its discharge. A slight amount of unbiassed observation, however, will teach you that such a contraction of the os or cervix uteri as to impede the discharge of the menses *guttatim* is very unusual; while it will further show that, in the majority of cases in which this condition really exists, the narrow cervix is only a part of the evil,—that the neck of the womb is small because the organ is altogether very undeveloped."

In the treatment of the neuralgic form of dysmenorrhœa the hot hip-bath (96°–98°) is recommended to be frequently repeated, and for the direct relief of pain to resort to all other remedies before using the preparations of opium, on account of the severe gastric disturbance sometimes following its use; compound spirits of ether with chloric ether, hyoscyamus with camphor, and Indian hemp; two objections, however, are made to the latter, which must militate against its use for any disease,—it is stated to vary much in strength, and the susceptibility of patients to its effects is also said to be very different. The inhalation of chloroform or ether sometimes gives permanent relief, and the application of the former to the hypogastric region is also useful; but nothing is said of the introduction of its vapor into the vagina, from which proceeding Scanzoni says he has seen immediate and perfect relief of the pain, even when only applied for a few minutes.* Nor is there any notice of belladonna as being of service in this distressing disease—a remedy which, in our hands, has acted very efficaciously many times. For the congestive form of the disease the indication is very plain; in these cases, where, as the author expresses it, the congested womb aches until nature bleeds it, our course plainly is to imitate nature, and relieve the oppressed organ by artificial means. Leeching the uterus itself has proved most efficacious, but it is a proceeding which, for various reasons, cannot be resorted to in this country out of the larger cities, and cupping to the sacrum, or at best scarifications of the neck of the uterus, must be used as substitutes. In those allied cases depending upon the rheumatic diathesis, "colchicum is often of much utility, and, during the paroxysm, twenty or thirty minims of the tincture, with small doses of laudanum and of antimonial wine, will often give more relief than any other remedies, and prove especially useful when large doses of narcotics would be of no service;" but the principal part of the treatment for the cure of these cases must be carried on during the intervals. His opinion having been given upon the rarity of mechanical causes of dysmenorrhœa, but little is necessary upon its treatment; in regard to instruments for dilating or incising the cervical canal, he says he is "perfectly at a loss as to the principle upon which these instruments are recommended. If the cervix uteri be wide enough to admit them, I do not see how its narrowness can offer a mechanical impediment to the escape of the menses." Such instruments are much less frequently used now than a few years ago.

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* Lehrbuch der Krankheiten der Weiblichen Sexualorgane. Wien, 1857.

In the sixth, seventh, and eighth lectures, the subjects of hypertrophy and inflammation of the uterus are considered, with their treatment. We shall not enter upon this subject, because the author's Croonian Lectures have been before the profession for some time, and, excepting what relates more immediately to practice, what is given in the work is to be found at greater length in them. Nor do we believe there is any necessity for a repetition of the arguments against the view that chronic inflammation and ulceration of the os and cervix uteri are the sole or chief origins of all female complaints; if the *coup de grâce* has not been given to that doctrine in the lectures above alluded to, we need not expect to see it given now, or, indeed, hereafter.

In connection with the subject of inflammation of the uterus, we will quote a paragraph from one of the lectures on cancer, not only as relating to it, and as one example of the great progress which has been made in uterine pathology, but particularly as an instance of the author's extreme candor and fairness in giving full credit for any improvements, even though they may have been made by those against whose doctrines he has shown himself an active and powerful opponent:—

"To those practitioners and writers, both English and foreign, who have taken the most active part in the study of the inflammatory affections of the neck of the womb, and whose investigations have led them, as some believe, (and I confess myself to be of that number,) to an exaggerated estimate, both of their frequency and of their importance, we yet owe a debt of gratitude for the light which they have thrown on this disease, which outweighs many overstatements and cancels many errors. Cancer of the uterus used, before their time, to be described as a disease slow in progress, continuing in its first quiescent stage of scirrhus not only for months, but for years, and then excited, by one knows not what cause, to activity, passing into the stage of ulcerated carcinoma, and thus, at its close, quickly destroying the patient. It sufficed then for the neck of the womb to be hard and painful, and somewhat enlarged, for the suspicion of malignant disease to be entertained, and for years of causeless anxiety to be entailed upon the patient. Such and such like were the results which followed from confounding the consequences of inflammation and of kindred processes, with the changes which the deposit of the elements of cancer brings about in the affected part."

The subject of flexions of the uterus is of interest, on account of the different views held by eminent men in regard to their pathology,—the question whether the symptoms which accompany them are caused primarily by the disease, or are occasioned by the state of the uterus they induce,—and the extent to which mechanical treatment is beneficial in remedying the evil. Our author states that he follows Virchow's explanation of the manner in which these flexions take place, who believes that the cause is to be found in the anatomical relations of the parts; the neck of the womb being firmly connected with the posterior and lower part of the bladder and the body being movable, any force acting upon the latter part, whether slowly and constantly, or more suddenly, tends to bend the organ upon itself, and produce the disease in question. Now, in turning to Scanzoni's work, (p. 71,) already referred to, we find that he attributes to Virchow the doctrine that ante and retro-flexions are produced by peritoneal adhesions, and he devotes considerable space to combatting a view, which we think disproved by the observation of a single case, where the disease was present without such adhesions, and he refers to several such. Again, Scanzoni himself makes use of the anatomical relations and connections of the cervix uteri compared with the mobility of the body, to explain the fact that these flexions, when they occur in women who have never borne children, are more extreme than in others—the stretching which the parts have undergone by child-bearing having produced a laxity of the structures which allows, in the one case, a certain amount of version to take place with the flexion which cannot occur in the other. Without reference to the original authorities we cannot reconcile the discrepancy, nor decide which is the true authority; it is equally difficult to suppose Scanzoni unacquainted with the true views of his eminent countryman, or that a man so well read as Dr. West should have made the error.

The relative frequency of anterior and posterior versions and flexions of the uterus is also an undecided question. The author's experience of thirty-five cases, in only nine of which was the dislocation anteriorly, does not agree with the statement of Rokitansky, who asserts the former to be the more frequent. The statistics of Valleix and of Mayer show that both forms occur with about equal frequency. Our author believes, however, that anteversion is frequently overlooked.

The study of the causes of these forms of disease introduces some most interesting points, which we can only glance at. As they occur in great disproportion during the child-bearing age of woman, their cause must be sought for in circumstances connected with the highest functions of the sexual organs. Therefore, very early marriage, frequent abortions, or child-bearing, will be found to have preceded the disease generally; whatever tends to check the process of involution of the womb after pregnancy must be a powerful cause of the disease; thus, abortions are more likely to produce it than labor, because the patient resumes her ordinary occupations sooner after the former than the latter, too often deeming a miscarriage a matter of no moment, and thus subjecting herself to chronic inflammation of the uterus, which effectually checks its return to a natural state; efficient pains during labor have also a great effect upon the involution of the uterus, and in cases of flexions of the uterus, a large proportion are found to have been delivered by instruments; but, of all causes, the suckling of the infant is the most efficient in producing perfect uterine involution, and of those suffering from flexions, a large majority have not fulfilled this duty of maternity. We know of no more striking instance than this of the beautiful harmony which reigns through nature,—a harmony which we perceive more clearly the more we understand her operations. In this instance, until deficient involution of the uterus after pregnancy has been recognized as a cause of various forms of disease of the organ, we failed to perceive the importance of other circumstances, the presence or absence of which tended to continue it in its hypertrophied and congested condition, ready at any moment to be attacked by more severe disease.

There are even more discrepancies of opinion in regard to the symptoms of flexions of the uterus, than in regard to other points concerning them,—or, rather, as to how much the symptoms depend primarily upon the mechanical condition of the organ, or are only secondarily connected with it. The question involves another, in regard to the extent to which reposition of the organ, and its retention by mechanical means, will cure the patient of her ailments. The remarks of the author, in this connection, are highly judicious—entirely free from any feeling of a case to be made out on one side or the other. Excessive and painful menstruation, leucorrhœa, pain and difficulty in micturition and defecation, and pain in the pelvic region generally, accompany flexions of the uterus.

> "In these symptoms it is obvious that there is much that of itself cannot be regarded as pathognomonic of one uterine affection rather than of another, since they constitute just that train of ailments, which, in varying combinations and

with varying intensity, we meet with in almost every disorder of the womb. To this, however, it would not be right to attach much importance, since the uterine ailments that manifest themselves by some one characteristic symptom, or by characteristic combinations of symptoms, are very few indeed. * * * * The symptoms are like the alarm-bell, which gives notice of a something wrong, and serves to awaken attention; it is not fair to expect that they should at once inform us not merely what part suffers, but what the exact cause is on which those sufferings depend."

The author next goes on to caution the student against deciding that these flexions of the uterus are of no importance, merely because they are sometimes proved to be present where not a sign of uterine disease has ever presented itself; and he states that cancer not unfrequently makes considerable progress, and fibrous tumors often attain considerable size, without giving rise to any symptoms. Again, as to the liabililty of overrating their importance:—

"There is a French phrase which expresses excellently well the character of those in whom both these misplacements, and other uterine ailments, are generally attended by the most urgent symptoms: they are persons *qui s'écontent vivre*—who watch themselves live; and the ailments, of which another would be barely conscious, are to them sources of exquisite torture. The ailment may be a real one, and yet it may be the wiser and more hopeful course to try to remedy the state of constitution which exaggerates the patient's sufferings, rather than to meddle with the local affection that excites their present manifestations."

Rejecting those cases where the patient is over-sensitive, as well as those in which the disease exists without giving rise to any symptoms, our author believes that many yet remain whose sufferings, or many of them, may be safely attributed to the uterine flexion. Our readers will have already anticipated that for the relief and cure of these he does *not* resort to mechanical means, and rejects the intra-uterine pessary. But a method of cure introduced and practiced by so celebrated an authority as Dr. Simpson, and sustained by such men as Valleix, of Paris, and Kirvisch, of Prague, is not rejected without an examination of its merits, and a full statement of the arguments against its use. These occupy several pages of the work, and we must refer to it for the details. Dr. West has tried the instrument, and found it not without danger as well as inconveniences, and he now contents himself with a plan of treatment which is less showy and less attractive to the vulgar, but which rarely fails to relieve the patient; "to the best of my power, I take care of the general symptoms, and leave the misplacement to take care of itself." Rest in the horizontal position, leeches to the uterus occasionally, if that organ is tender, careful attention to the state of the bowels, strict precautions during the menstrual periods, the administration of chalybeates, the relief of pain, and the cold hip-bath and douche, are some of the items which make up his plan of treatment. There is a striking coincidence between the opinion of Dr. West and that of Scanzoni, as to the value of the intra-uterine pessary in these cases, and a great similarity between their modes of treatment for the relief of the symptoms accompanying flexions. Both testify to the pain and leucorrhœa produced by the instrument, the inconvenience attending its use, and its worthlessness as a remedy for the disease; and both combat the general symptoms—seeking to subdue existing inflammation, remedy imperfect involution, check the leucorrhœal discharge, quiet pain, increase the tone of the pelvic organs, and set the general system in a healthy state, leaving the flexion to take care of itself. The testimony of Scanzoni on the merits of the stem-pessary is especially valuable, as he followed the celebrated Kirvisch, at the head of the Lying-in Hospital at Prague. Kirvisch modified the instrument of Simpson, and used it extensively in his practice, and was one of the warmest advocates of this mode of treatment in Germany; yet Scanzoni says he has examined many women who were a long time under his predecessor's treatment, and had worn his instrument, who were not relieved of the flexion. As to the value of the uterine sound, as a means of diagnosis of these cases, the estimate of Dr. West is much higher than that of Scanzoni.

Besides the five lectures occupied with the subject of flexions of the uterus, and those already alluded to, the work contains three lectures on other misplacements of the organ, four on uterine tumors and outgrowths, and three on malignant diseases. As the subjects we have considered here are no more interesting in and of themselves, and no more important in practice than those to which we have not called attention, so are they no more ably and judiciously treated; we have taken, almost at random, two or three subjects, and, in giving the views of the author upon them, believe we have enabled our readers to judge of the merits of the whole work. Indeed, we do not think we have noticed the best part of the work; if there is any part of it which surpasses in excellence the rest, it is the lectures on cancerous disease; his descriptions are graphic, his pathological views include the latest discoveries, the statistics of the subject are full and instructive, and his measures of treatment, hopeless though these cases may be, are of great practical value.

We anticipate with pleasure the appearance of the second part of the work, which, if it equals this part, will complete one of our very best volumes upon diseases of females. It is impossible, in these days of book multiplication, to say of any one work that it contains everything upon the subject of which it treats, but we can say of Dr. West's, that no library can be complete without it,—the student will find in its pages all that is necessary for him, and the practitioner much to add to his practical knowledge; and both will find pleasure as well as profit from its perusal.

ART. II.—*Leçons sur le Chancre.* Professées par le Docteur RICORD; redigées et publiées par ALFRED FOURNIER, Interne de l'Hôpital du Midi. 8vo., pp. 351. Paris: Adrien Delahaye, 1858.

Lectures on Chancre. By Dr. RICORD; edited by ALFRED FOURNIER, Resident-Physician of the Midi Hospital. 8vo., pp. 351. Paris, 1858.

WE are no admirers of Mons. Ricord. Of all the writers on Syphilis, whom it has been our lot to examine, he is the most obscure and unsatisfactory. Filled with overweening conceit and dogmatism, he has done more, in our judgment, to embarrass the progress of our knowledge of syphilis, than any man of modern times. His works are without system or arrangement, and so surcharged with flippancy as to render it extremely difficult to separate the little good they contain from the immense amount of chaff and rubbish in which that little good is buried. If he had set out with a determination to be obscure, he could not possibly have succeeded better. His edition of John Hunter was a reputable production, the more so because he was at the time quite a young man, working for position, and he could, therefore, afford to be clear and intelligible; but when he set up for himself, as "Chirurgien de l'Hôpital du Midi," he strove to become a lawgiver in his particular pursuit, to subvert the facts accumulated by his predecessors, and to set by the ears his contemporaries and compeers. In a word, Ricord became inflated, and, as a consequence, he has ever since been floundering about upon the broad ocean of uncertainty, teaching one thing to-day and another thing to-morrow; and yet, strange to say, this same Mons. Ricord is the very man by whom all other men, especially the little ones, who never have any opinion of their own, and whose nervous system is too feeble to harbor one of any kind beyond the passing hour,—this same Mons. Ricord, we say, is the very man by whom these little men swear, and move, and have their being, upon all topics pertaining to the nature and treatment of syphilis. Dispute anything that has been advanced in the writings of the French syphilographer, and you are at once set down by his friends and admirers as an ignoramus and a heretic, as utterly behind and below the times, as a sort of dark-ages man, whom the light of the sun of science never deigns to visit, to warm, and to illuminate. Whatever he says is law and gospel with them; they swear by it, talk by it, practice by it. There is but one syphilographer, say they, but one expounder of chancre and its effects, but one interpreter of nature in syphilis, and that is "Le Chirurgien de l'Hôpital du Midi." All other men who think and act for themselves in the matter, who dare to form opinions, and carry out these opinions in practice, are old fogies, dolts, asses, for whom there is no hope or salvation either in this world or in the world to come.

We solemnly believe that M. Ricord has done an immense amount of harm as a writer on syphilis, by unsettling the views and practice of the less thinking portion of the profession. The work before us affords ample proof of the truth of this assertion. The "notes et pièces justificatives" of the editor, Alfred Fournier, who is a warm and admiring disciple of Ricord, are too explicit upon the subject to admit of doubt or equivocation. The book everywhere furnishes irrefragable evidence that Ricord has again changed his opinions respecting the nature of chancre, and the writer takes special pains to apologize for his master's many inconsistencies in this, as compared with his former productions. The "notes et pièces justificatives" of Fournier occupy not less than one hundred and fifteen pages of the present work, and it is impossible to peruse them without coming to the conclusion that, even yet, with his vast experience, his notions are not to be received with implicit confidence. He now insists upon the existence of two distinct species of chancre, the indurated and non-indurated, whereas, until lately, he taught that there was only one kind, subject to variation in consequence of local and constitutional causes not connected with the poison of the disease. It is remarkable that a practitioner enjoying so many opportunities of observation, should have been so slow in arriving at this conclusion. The Midi Hospital is the largest depot for syphilitic patients in the world, and if he is really a man of sagacity and judgment, as is alleged he is, it is astonishing that he should have remained so long in doubt upon the subject. The observations of a single year in such an establishment would, one would suppose, have been sufficient for a man of ordinary capacity to produce what it took Ricord twenty-five times that period to produce. The very fact that he has been so long in reaching his present conclusion, so diametrically opposed to those previously attained by him, is sufficient to raise a just doubt in regard to the validity of the doctrines he now teaches. The case of the French syphilographer affords a memorable proof of the circumstance, so often remarked and commented upon, that it is not the number of facts which one observes that imparts perfection to our knowledge of disease and its treatment, but the manner in which they are observed. Ricord has literally lived in a syphilitic atmosphere for a quarter of a century, and yet he has just ascertained that there are two distinct species of chancre, notwithstanding these two species of chancre have daily danced before his eyes, and hourly invited his scientific scrutiny. We do not deny a man the right of changing his opinions; but to change them with every little whiff of wind that sweeps along the surface, is utterly unendurable in a would-be reformer and a would-be scientific teacher. We shall impatiently await the arrival of the next steamer from Havre for further changes in the views of this most sagacious syphilographer. Meanwhile we shall present the reader with an analysis of Mons. Fournier's book, which we deem the more necessary, as it is not likely to meet with an English translation.

Defining syphilis as a contagious malady engendered by a virus, and arising from a chancre, M. Ricord very properly maintains, in opposition to the doctrines of Vidal and his followers, that chancre arises from a chancre, and can alone reproduce it, and that constitutional syphilis recognizes no other origin, unless it be hereditary transmission. In confirmation of the law, that chancre is the necessary antecedent of acquired syphilis, M. Fournier analyzed 826 cases of constitutional syphilis admitted into the hospital in 1856. Of these, 759 were of the secondary, and 56 of the tertiary type. In 815 cases the constitutional effects could undoubtedly be ascribed to a primary sore, and in the eleven exceptional cases that could not be traced directly to a chancre, some were due to hereditary origin, and in others chancrous cicatrices and inguinal enlargements denoted the pre-existence of the primary cause.

As mentioned above, M. Ricord has now abandoned the doctrine of there being but one variety of chancre, and teaches that there exists two distinct forms,—the simple, soft or non-infecting, and the indurated or infecting variety. The simple chancre, which never contaminates the system, is by far the most frequent in occurrence, as will be seen from the following statistics:—The whole number of chancres observed by MM. Fournier and Puche, was 10,341. Of these, 8260 were of the simple, and 2081 of the indurated variety; the proportion being as 4 to 1 in favor of the non-infecting sore. In explanation of this interesting fact, M. Ricord gives two reasons, viz.:—

> "Simple chancre is the most fruitful source of the chancrous virus; it is the form of ulceration that secretes pus the best endowed with contagious properties, and which for the longest time preserves the power of inoculating. It does not create an immunity against a new contagion from a chancre of the same species, *i.e.*, against its reproduction in the same individual. It is known, on the contrary, that an indurated chancre occurs, as a general rule, but once in the same subject."

M. Ricord, after an experience of twenty-five years, does not hesitate to affirm that there does not exist any safety against the contagion of a soft chancre, and that the attempts of the supporters of syphilization to change his opinion have been futile. In the therapeutical power, therefore, of inoculation from a simple chancre, as a prophylactic agent against a new attack, he is no believer. In support of this, he instances M. Lindmann, who has inoculated himself over twenty-five hundred times, and never with a negative result.

Proceeding now to a novel question, Ricord states that when he held the doctrine of the pathological unity of both varieties of chancre, he taught without distinction that chancre exhibited itself everywhere; but since his recent researches had led him to distinguish between the two species, he had changed his views. Thus, in his investigations he had seen the indurated chancre appear on every part of the body, but he had never observed simple chancre on the head, including under this term the lips, mouth, nasal fossæ, etc. He is not prepared to deny the possibility of such an occurrence; but, inasmuch as there is no well-authenticated case on record, he does still maintain that soft chancre does not occur on this region, and that when a chancre is situated here it is invariably indurated and accompanied by the proper symptoms of constitutional syphilis. In these views he is sustained by his colleagues, MM. Puche and Cullerier, and in fifty-six cases carefully analyzed by A. Fournier, all the chancres, without an exception, were of the indurated form.

In regard to the mode of propagation and the conditions necessary for the development of the primitive sore, the pus must come in direct contact with the tissues, which must themselves be in a proper condition to receive the influence of the contagious matter. The most favorable state for this action is the presence of an abrasion or slight wound. If the matter be allowed to remain upon a part covered with unbroken epithelium, it will almost certainly produce no result. It is on this account that we are able to handle chancres without becoming inoculated. Not only is this true of the skin, but also of the sound mucous membrane, so that, as has been shown by M. Cullerier and others, a woman who has had connection with a man affected with chancre can inoculate another person, though she herself will remain intact. This is the doctrine of mediate contagion, which has been questioned by some authors and totally disbelieved by others, but which certainly seems to be a settled fact, from several cases adduced in the work before us. As to the virus, it is not necessary that it shall be recent, provided it has undergone no changes which can destroy its contagious property. When a chancre has become gangrenous, it has been proved by inoculation that its pus is harmless.

Inoculation, or artificial contagion, furnishes us a valuable mode of studying the characters of a chancre in nowise different from the ordinary one. This is effected by making a slight puncture in the epidermis with a lancet charged with the virulent matter. The phenomena begin almost immediately, and are as follows:—

> "The puncture commences to redden and to be surrounded by a slight inflammatory border, and while this is enlarging it tumefies, and soon a small papule is formed. Upon the top of this the epidermis rises up, and a vesicle filled with serum appears; this enlarges, the fluid grows thick and purulent,

and a true pustule succeeds it. This becomes umbilicated at its centre, and after the lapse of a certain time it flattens. Then, one of two events follows: either the pustule breaks, leaving an open ulcer of uniform extent, which constitutes the true chancre, or, the pustule remains intact, dessicates, and is covered by a brownish crust, which, if removed, will expose the specific ulcer, having the following characters:—its circumference is very regularly rounded, provided, always the pustule was developed on a homogeneous tissue; its edges are clearly defined, as if the loss of substance had been produced by a punch; they are, for the most part, a little turned outward and slightly abrupt; under the magnifying glass the edges are slightly jagged. The bottom of the ulcer, most often irregular, as if worm-eaten, presents in general a slightly grayish discoloration; it appears to be covered by a lardaceous substance, a sort of a pseudo-membrane, so adherent that it cannot be detached by washing. The base upon which the ulcer rests is thickened and engorged; it is encircled by an areola of a reddish or violet color, more or less extended outward from the circumference of the ulcer. The secretion is sufficiently analogous in its external characters to the secretion of ordinary wounds; but it is a specific pus on account of the virus it holds in solution."

In the examination the character of the base of the chancre is the most important point to be taken into consideration. The diagnosis is easily established, if there is no inflammatory engorgement, and if it offers to the touch a pliability almost the same as in the surrounding parts. It may, however, happen that the base of the ulcer is thickened to a greater or less degree, imparting to the finger the same sensation as when the base of an engorged boil is pressed. This hardness of the simple chancre is a very different thing from the induration of an infecting chancre, and as such should be carefully examined, so that we may be able to state to the patient with more certainty the probability of his becoming the subject of a loathsome taint of the system; and not only this, for upon the induration depends the course of treatment to be pursued.

Simple chancre may or may not be followed by bubo; thus, of 207 patients affected, 65 had a bubo and 142 had none. Should this accident occur, a remarkable fact, and one known to Hunter, is that it limits itself to the superficial group of lymphatic glands, and that the characteristic primary syphilitic bubo is never met with in the deeper set of ganglions. Even when a superficial gland has become a specific suppurative depot, the pus cannot be transmitted through the inter-lymphatic vessels from one gland to another.

The bubo of simple chancre is highly inflammatory, is painful from the commencement, runs its course rapidly to suppuration, and the pus is inoculable; it is, in fact, but a glandular chancre. Inasmuch as this generally affects but one of the glands in the region in which it occurs, M. Ricord has long since proposed for it the name of *acute monadenitis.*

Simple chancre, which is at the same time the cause of a common irritation and a source of virulence, presents two varieties of bubo. If the chancre acts upon the ganglion merely as a common irritant, it gives rise to a simple adenitis, which is characterized in its progress by the ordinary symptoms of a non-specific bubonocele. It is a ganglionic inflammation which follows the course of other phlegmasias, and may terminate in resolution or in the formation of pus having no specific qualities. The second variety is the acute monadenitis, as described above, of which the pus, when inoculated, gives rise to the pustule of a chancre, and when opened, the wound is itself directly converted into a specific sore.

In explanation of the phenomena that cause the specific character of ganglionic pus, M. Ricord cites the following reason :—

> "The virulent pus which bathes the surface of the primitive ulcer penetrates the ulcerated and open extremities of the lymphatic vessels; this pus rapidly traverses these canals, which it generally leaves unharmed, probably on account of the rapidity with which it traverses them; then it arrives at the glands, and, being retained in their interior, exercises its specific action, that is, produces a true inoculation, soon followed by the formation of a chancre."

Such is the specific variety of adenitis, to which has been given the name of *bubo by absorption*. Whilst the appearance of the adenitis is almost immediate, and coincides generally with the epoch of the induration of the chancre, in the case of simple chancre there is no fixed time for the lymphatic involvement. It does not show itself always, as does the indurated bubo, in the course of the first or second week, but may appear at a time far distant from the primary sore. Thus, in a case observed by M. Puche, a virulent adenitis showed itself, after the lapse of three years from the time of the appearance of a soft chancre of the serpiginous type. To return again to the simple chancre, which presents in the highest degree specific virulence, a number rather than one will be seen upon the same subject. Thus, of 254 patients presenting simple chancre, only 48 had one, while 206 had a number of chancres, and of this number more than one-half had from three to six. It is this form of chancre which continues the longest time, and preserves its specific qualities almost up to the last moments of its existence. Its tendencies are to destruction, and it generally spreads over a larger surface than the indurated chancre; in other words, it is the most liable to phagedenic action, which commits such fearful ravages, destroying organs and tissues to a horrible extent. From the preceding statement, M. Ricord, therefore, lays down the following conclusions :—

> "Simple chancre is one whose base remains soft or presents merely an inflammatory thickening. It does not react upon the lymphatic ganglions at all, or influences them in a peculiar manner, by producing an acute inflammatory

monadenitis, terminating almost always in suppuration, and furnishing most often an inoculable pus. Its edges are clearly defined, and its bottom is irregular and worm-eaten. Most commonly it is at first multiple, or becomes so after a time by a series of inoculations in its neighborhood. Its pus is, *par excellence*, virulent and contagious, preserving for a long time its specific qualities. Finally, this form of chancre has a destructive and invading tendency, and is most apt to undergo the phagedenic variation."

The true pathognomonic character of chancre is that its pus is capable of producing, by inoculation, an ulcer similar to that by which it has been furnished.

In regard to the prognosis of chancre, M. Ricord, with the authority of long experience, insists that "simple chancre, with a soft base, is a purely local affection, which limits its effects to the region which it attacks and is never followed by constitutional accidents. In other words, it is a chancre which does not infect the system,—a chancre without syphilis." If this be true, how important is it that the diagnosis should be made out upon the first examination, so that the practitioner and patient shall know with certainty what the consequences shall be.

Regarding simple chancre, then, as a mere local affection, M. Ricord directs his treatment to it alone; the great object being to reduce the specific ulcer to the state of a simple sore,—to destroy the chancre as soon as possible. This is to be effected by a deep, destructive cauterization; and after successively experimenting with Vienna paste, caustic potash, &c., he now proposes a new agent of "*wonderful efficacy*," but whose application is very painful. This caustic is composed of sulphuric acid and powdered vegetable charcoal united in the proper proportions to form a semi-solid paste. This is to be spread upon the whole surface of the chancre and a slight distance beyond it; it soon dries, and forms a black adherent crust, which generally drops off, in the course of the second week, leaving a healthy ulcer, in every respect analogous to that which follows the separation of an eschar. Sometimes, indeed, the reparative process is almost finished, and occasionally a cicatrice is formed by the time the paste has come away. Should, however, the patient refuse to submit to cauterization, the most simple hygienic means will furnish the best results. Thus, if the chancre has no tendency to spread, emollient or slightly astringent lotions, frequently renewed, and followed by the application of dry lint to the ulcer, will answer a good purpose. If the suppuration be abundant and the chancre is extending, aromatic wine will be found to be one of the very best topical remedies. The patient is to wash the affected part three or four times a day with this, and then cover it with a piece of fine lint merely moistened with the wine. Eight or ten grains of the gummy extract of opium should be added to the ounce of aromatic wine, if the chancre be accompanied with much irritability and pain, and opium should also be administered internally. When the chancre takes on phagedenic action, M. Ricord has the greatest confidence in the tartrate of iron and potassa, which seems to exert some specific influence upon it; and although he looks upon cauterization as an excellent preventive and curative agent of phagedena, yet he has combated the greater number of these cases with the above remedy. His formula is one ounce of tartrate of iron and potassa to about six and a half ounces of distilled water. Of this, a tablespoonful is to be taken three times a day, and the ulcers are to be washed and dressed with the same liquid twice in the twenty-four hours. On two occasions M. Ricord saw enormous phagedenic chancres, which had resisted every form of treatment, modified and cured by an intercurrent erysipelas. Nothing can be more hurtful to a simple chancre than fatty substances; and, above all, mercurial ointment should be scrupulously withheld, for it is in itself one of the most frequent incentives to gangrenous action. The ordinary treatment is applicable in larvated chancre when seated just behind the meatus, observing the precaution to keep the lips of the orifice separated by a small cone of lint. When it is seated farther back in the urethra, and is attended with very acute symptoms, antiphlogistic treatment is indicated; fifteen or twenty leeches to the perinæum or pubes, baths and copious drinks will be useful. Above all things, morbid erections, which by distending the affected part cause rents, and a further extension of the chancre, must be avoided by appropriate remedies. When the acute symptoms have subsided, injections, several times daily, of equal parts of aromatic wine and decoction of poppy heads, will be found to be a very simple and good mode of medication If this does not produce irritation, the pure wine may be substituted. Chancres seated far back in the vagina and on the neck of the uterus should be treated on the same principles as when the chancre is external.

M. Ricord very properly condemns mercury, during the course of a simple chancre, as favoring the development of phagedenic action. No constitutional treatment at all, as far as the affection itself is concerned, is required; should the patient be weakened by privation and disease, tonics and sustaining measures are indicated; if, on the contrary, he be robust and plethoric, a slightly debilitating regimen will do good.

Entering now upon the consideration of infecting or indurated chancre, that which alone is capable of producing a constitutional affection, the first noticeable fact is that it is natural to man alone; for it is well established, that of the innumerable attempts that have been made to inoculate animals, not a single one has furnished the specific pustule. This form of chancre, unlike the soft variety, can be developed on any part of the body, from the crown of the head to the sole of the foot; nor are the mucous membranes any more exempt from it than is the skin. It generally developes itself without pain, and in so slow and insidious a manner as that it is not uncommon to see persons affected with a large sore of which they had not the slightest suspicion.

The form of an indurated chancre in nowise differs from that of a simple one; sometimes it is a pustule, at others, a true chancre from its commencement. To an experienced eye there are, however, some slight differences. The surface is smoother, presenting a less worm-eaten and jagged appearance; the bottom is of a uniform grayish tint; the borders are generally smooth and shining, as if varnished, and insensibly slope toward the bottom of the ulcer, which has a cupelliform appearance. It is most often single, small in extent, and rarely becomes phagedenic. It suppurates but slightly, the discharge being of a saneous, serous nature. The great pathognomonic sign is the induration which surrounds and lies under the ulcer. This is due to effusion of lymph in the absorbent vessels and in the adjacent cellular tissue, and imparts to the touch an elastic cartilaginous sensation which cannot be mistaken. Bell likens it to the hardness of the section of a dry pea, and this is the most frequent form of induration. There is one variety characterized by its being superficial, merely lining the base of the ulcer, which, when pressed, imparts to the touch a sensation like that produced by lightly pressing with the fingers the opposite sides of a piece of parchment. To this, M. Ricord has given the name of *parchment induration*, and it is sometimes so delicate and superficial as to require some tact to discover it. In regard to the time of the appearance of the induration, M. Ricord states he has never met with it before the third day, and positively denies that it does in any case precede the ulcer, which is the ground held by G. Babington. It begins to show itself generally toward the end of the first week, and becomes more marked in the second week after the infecting coitus. The induration is most evident in those tissues which abound in lymphatic vessels, as for example, the frænum and lips of the meatus; and, inasmuch as they do not exist in such numbers in the mucus membrane of the vagina, in the carunculæ myrtiformes, the anus, &c., it is not so well marked. In these cases it is of the parchment variety, which is not only difficult of detection while it actually exists, but which often disappears before the process of cicatrization has been completed. Hence it is that many physicians have concluded that an infecting chancre in females cannot be indurated, attributing the constitutional effects to a simple chancre. They must take the above facts into consideration, and remember that an experienced touch is necessary to detect the slightly indurated sore. M. Ricord, therefore, insists that induration is always the prelude to constitutional syphilis in women.

Caustics have the power of hardening the tissues and creating an artificial indurated base in chancres which have been subjected to their action. Such is the effect of nitrate of silver, the mineral acids, alum, tannin, and other articles; but more especially is this true of corrosive sublimate and chromate of potassa, which indurate the parts in such a manner as to deceive the most practiced touch. In case of doubt, however, another sign of the greatest diagnostic value is the indurated, indolent bubo, which is produced exclusively by the infecting chancre, and invariably accompanies it. Its appearance, generally, coincides with the period of the induration of the chancre, and almost always shows itself during the first or second week. It is multiple, attacking several glands simultaneously, which impart to the touch the same feeling as does the base of the indurated sore. It is not painful, is very indolent, remaining a long while after the cicatrization of the primary sore, and evinces no disposition to become inflamed. Except from an outside irritation, this form of bubo never suppurates; that is, specifically, as is proved by the fact that the pus when inoculated is incapable of producing the characteristic pustule of chancre.

M. Ricord has long since maintained that when induration exists it is necessarily followed by constitutional symptoms, that it is, in fact, less a cause than an effect, being but the first of the secondary accidents. The taint of the system, if the sore be left alone, will appear before the lapse of six months. He divides syphilis, as formerly, into three stages; the first being marked by chancre and bubo, the second by affections of the superficial tissues, and the third by affections of the deep tissues. As regards the contagiousness of each, the primary is inoculable by actual contact; the secondary is not, but is transmissible from parent to offspring; the tertiary being neither transmissible nor inoculable, but the children of parents so affected are susceptible to scrofulous disease.

The manner in which the system becomes infected by the syphilitic virus, how it is transmitted to the different organs and through the different tissues, is not certainly known. It is justly supposed that it is effected through the medium of the blood; but this is not found to contain any contagious property, though it is modified, as the examination of the blood of persons affected with an indurated sore shows an increase in the albumen and a diminution of the globules. We look in vain for the cause in the different secretions, nor does even the pus of any of the secondary or tertiary accidents possess any inoculable property on healthy persons. This is effectually proved by the experiments of MM. Cullerier, Sarrhos, Fournier, and others, upon their own persons. Inoculation, too, of the morbid products of secondary or tertiary syphilis upon syphilitic subjects is always sterile; thus proving the Hunterian doctrine "that the constitutional symptoms of syphilis do not produce a pus similar to that from which they arise."

In the same way that vaccination affords immunity from an attack of smallpox, so does indurated chancre produce a diathesis, which prevents the system from being a second time affected. As a law, M. Ricord lays down that indurated chancre occurs but once in the same subject. This is substantiated by the fact, that when a syphilitic person is inoculated with the pus of an infecting chancre, either no result at all follows, or a simple, soft chancre is produced, which throughout its whole course does not exhibit a single sign of induration. This simple sore will, however, produce in healthy persons a true indurated sore, thus showing that syphilis can be transmitted by a subject previously affected contracting a new chancre From the most recent researches on the contagion of chancre, M. Ricord, therefore, teaches that simple chancre in uncontaminated persons reproduces a simple chancre. Indurated chancre, under the same circumstances, reproduces its own special variety. Indurated chancre is transmitted to subjects previously syphilitic under the form of a simple chancre, which, in its turn, may be transmitted either as an infecting or a non-infecting sore.

In the treatment of this form of chancre, it is of the utmost importance that it should be attended to in its early stages before induration has appeared; for then it is but a local affection. By its complete destruction, converting it into a simple sore, and depriving it of all infectious properties, the systemic taint may be warded off. This may be effected by excision when practicable, or with equal certainty by the carbo-sulphuric paste. M. Ricord states that of all the cases which he has seen cauterized, within the first four days, not a single one has been followed by constitutional symptoms. Should the patient present himself at a later period, or should the sore have been neglected, this procedure will be useless; the indication then being to treat the diathesis. The specific for incipient constitutional syphilis, both as a preventive and curative agent, is mercury, and the form preferred by M. Ricord is the protiodide. He administers this so soon as the induration appears, and condemns those physicians who wait for more painful and troublesome symptoms before beginning this course. Although the treatment is generally so beneficial in its results, it is not to be indiscriminately employed; for, when the slightest doubt exists in regard to the nature of the chancre, we must wait and withhold mercury. If the diathesis exist, it will not fail to show itself in the course of a few weeks; but if no symptoms appear by the sixth month, we may assure the patient of his present and future safety.

This course of treatment should not be carried to salivation; for then its curative action is generally suspended. Should it, however, supervene, it can be combated by the use of chlorate of potassa.

In a note concerning this remedy, we find that M. Fournier has come to the following conclusions:—

> "A mercurial stomatitis being produced, it is not necessary to suppress the specific medication to cause the accident to disappear. Chlorate of potassa, employed in conjunction with the mercury, suffices for its cure. In the progress of a stomatitis, the dose of the mercurial preparation can even be increased, jointly with the administration of the chlorate, in those cases in which the gravity of the syphilitic symptoms calls for the immediate intervention of an energetic medication. Chlorate of potassa is not only a curative agent in ptyalism, but can be employed equally well as a prophylactic."

As mercury is the specific for secondary, so is the iodide of potassium the specific for tertiary syphilis. Inasmuch as it is not only curative, but also preventive, it should always succeed a mercurial course, in order to prevent entirely or retard tertiary symptoms. After attentive and patient observation as to the curability of syphilis, M. Ricord has concluded that the best results are afforded by placing the patient on a six months' course of mercury, after which time the iodide of potassium is to be administered for three months. This plan, "in the great majority of cases, succeeds in neutralizing the poisonous virus."

Having thus considered, in detail, both varieties of chancre, M. Ricord, in his last lecture, gives the following *résumé* of the characteristic points of each:—

SIMPLE CHANCRE.	INFECTING CHANCRE.
1. Is the most common form; its base is soft; is generally multiple, and may be so from the commencement.	1. Is met with less frequently; the base is indurated; is generally single; rarely multiple.
2. The pus possesses the most contagious properties, and is inoculable during almost the whole time of the existence of the chancre.	2. The pus soon loses all specific virulency, at least on the infected subject, who becomes, in a few days, refractory to inoculation from his own virus.
3. Its tendencies are to spread and destroy. It is the variety most apt to undergo phagedenic action.	3. Shows little disposition to enlarge, soon limits itself, and spontaneously heals. Rarely becomes phagedenic.
4. It does not occur on the cephalic region.	4. Appears on every part of the body.
5. Is probably transmissible to animals, and can be reproduced, *ad infinitum*, upon the same individual.	5. Affects man alone, and can appear but once under its own proper form.

6. Bubo is not a necessary consequence; but when it does occur it is acute, mono-ganglionary, and commonly suppurates, the pus being inoculable.	6. Invariably followed by lymphatic involvement. The bubo is chronic, indurated, and affects several glands. Rarely suppurates, and the pus is not specific.
7. Its origin is a simple chancre, which reproduces its own variety.	7. Its origin is an indurated chancre, which equally reproduces its own variety.
8. It is merely a local affection, producing no influence upon the system.	8. Creates a diathesis, and is the beginning of constitutional syphilis.

Although M. Ricord insists on the unity of the syphilitic virus and two varieties of chancre, he is not prepared to say whether or not there are two varieties of chancrous virus. Even when it has been shown that these two forms of chancre belong to two distinct pathological varieties, it does not invalidate the fact of there being but one syphilitic virus; but merely demonstrates that there is, besides syphilis, an affection manifesting itself by a chancre, having no infectious influence upon the economy. From this, the legitimate conclusion would be, that there are two viruses, one belonging to syphilis, and producing an infecting chancre, the other being a chancrous virus independent of syphilis. Still, the question in regard to the duality of the chancrous virus is an hypothesis which time will have to clear up; while the unity of the syphilitic virus seems to be a well-established fact.

We have now finished our task of presenting to our readers an analysis of these lectures. Without entering into any criticisms upon their merits, we rather prefer to bring them forward, and leave each one to judge of them for himself. The work contains needless repetition, a fact probably owing to M. Ricord's desire to impress its contents more fully upon his readers. M. Fournier has acquitted himself creditably in arranging these lectures, and has taken considerable pains with the additions which he has made to the work.

ART. III.—*Clinical Lectures on the Principles and Practice of Medicine.* By JOHN HUGHES BENNETT, M.D., Professor of Institutes of Medicine and of Clinical Medicine in the University of Edinburgh, etc. New York: Samuel S. & William Wood. Second edition; 8vo., pp. 951. 1858.*

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* This work is the English edition with an American title-page, and is an admirable specimen of a well printed and illustrated book. If this practice of thus importing books in large numbers were more followed out, we might be saved from the miserable reprints with which we are annually flooded.

FEW of the present generation have evinced a more lively zeal for the promotion of medical science than the author of the work before us; and yet fewer have had their names coupled with so many discoveries which have advanced its boundaries, and have led to more important results. The discoverer of leucocythæmia, the introducer, or, at least, the diffuser of the knowledge of the beneficial effects of cod-liver oil, may lay claim to have been a laborer alike in the field of science and in that of humanity, and to have gleaned flowers whose brightness no scorching breath of envy, nor stormy change of doctrine, can wither or destroy. In this volume much of the research is for the first time collected, and the doctrines which have been gradually formed, are clearly announced and skillfully defended. This gives to these Lectures much more of a controversial character than works on Clinical Medicine usually possess. Whether this be an advantage or not, every reader will decide according to his individual opinion.

Dr. Bennett commences his work with some chapters which, although interesting, can yet hardly be construed to belong to the subject of Clinical Medicine: such as the relation of the science to the art of medicine; the political state of the medical profession; its social state. Indeed, throughout, we cannot avoid being struck with the fact that much matter is introduced which the title-page by no means calls for, and would seem to forbid. The reader will find this illustrated as we proceed in our analytical task.

The chapter on the present state of practical medicine embraces some remarks which cannot be allowed to pass unnoticed, as they explain much of the scope and aim of these Lectures.

"Although seventeen years have elapsed since the cell doctrine of growth has been admitted into physiology and pathology, medical men have not yet realized to themselves its vast importance in a practical point of view. The morbid processes of inflammation, of tuberculization, and of various morbid growths, are now for the most part elucidated by this theory. But a cell pathology is no more universally applicable to the phenomena of disease than is humoralism or solidism. Indeed, we may more correctly speak of a molecular pathology, as a molecule, and not a cell, is the first and last form of organization. What, however, it is important to remember here is, that if there be a molecular or a cell physiology and pathology, so is there a molecular and a cell therapeutics. For, it is evident, that those diseases which depend on an increase or diminution of cells, can only be reached scientifically through a knowledge of those laws which govern their evolution and disintegration.

"Thus, growth (that is, the multiplication of cells) is favored by increased warmth, by room for expansion, and by moisture;—and it is checked by cold, by pressure, and by dryness. If, then, an exudation be poured out and coagulated near the surface, as it can only disappear by its passing through the stages of cell growth, we favor suppuration, that is, the growth of pus cells, by warm poultices or fomentations, and retard it by cold and pressure."

These remarks are followed by a brief but able eulogy on the more modern means of investigation,—the microscope, auscultation, histological and chemical analyses. To them, in truth, must we look for the future constant and steady development of medicine : to them to that scrutiny which shall teach us to simplify our precepts, and to bring our practice in connection with the grand fundamental laws which govern every organism. But the time for the substitution of absolute laws (gained by our modern research) for those derived from empirical observation, has not arrived; so that when our talented author speaks of the "wreck of ancient systems," and the "approaching downfall of empirical practice," we respect his enthusiasm, we sympathize with his longing for determinate, fixed principles, uniting the laws of health and disease; but we also think of the years of unwearied investigation, the furrows that will deepen many a now youthful brow, the generations that will pass away and arise, before so many needful observations and carefully-ascertained facts shall be arranged into a harmonious whole, and be ready to be placed into the crucible, to have the pure glistening element of fundamental truth extracted.

The general method of examining a patient, and some of the more special modes of investigating disease, are ably described in the first section of the work.

The general examination is conducted on a similar plan to that followed by Professor Rostan in his ward at Hôtel Dieu, and is certainly exceedingly careful and minute. Let us take the inquiry into the nervous system, and into the digestive system as its type.

"NERVOUS SYSTEM.—*Brain*—Intelligence—augmented, perverted, or diminished; cephalalgia; hallucinations; delirium, stupidity, monomania, idiocy; sleep, dreams, vertigo, stupor, coma. *Spinal cord and nerves*—Pain in back; general sensibility, increased, diminished, or absent; special sensibility—sight, hearing, smell, taste, touch, their increase, perversion, or diminution; spinal irritation, as determined by percussion; motion, natural or perverted, fatigue, pain on movement; trembling, convulsions, contractions, rigidity, paralysis.

"DIGESTIVE SYSTEM.—*Mouth*—Lips, teeth, and gums; taste in the mouth. *Tongue*—Mode of protrusion, color, furred, coated, fissured, condition of papillæ, moist or dry. *Fauces, tonsils, pharynx, and œsophagus*—Deglutition—if impeded, examine the pharynx with a spatula, the cervical glands, neck, etc.; regurgitation. *Stomach*—Appetite, thirst, epigastric uneasiness or pain, swelling, nausea, vomiting, character of matters vomited, flatulence, eructations. *Abdomen*—Its measurement and palpation; pain, distension, or collapse, borborygmi, tumors, constipation, diarrhœa, character of dejections, hemorrhoids. *Liver*—Size, as determined by percussion, pain, jaundice, results of palpation, etc. *Spleen*—Size, as determined by percussion. If enlarged, examine blood microscopically."

The chapter on the special modes of investigation by palpation, mensuration and percussion, contain a brief summary of the facts connected with these methods of physical diagnosis; we would merely notice, in passing, that Dr. Bennett approves strongly of an ivory pleximeter and of a percussion hammer to elicit clear tones. So impressed is he with their superiority, that he states it as his belief that by means of these instruments, after an hour's practice on a dead body, the student is placed on a par (as regards the art of percussion,) with the generality of English practitioners; which statement any one who has used the instruments may well take the liberty of questioning, if he does not wish to be forced into the inference that the English practitioners possess no skill at all. Another special mode of investigation, the microscope, has its claims as a clinical aid more convincingly demonstrated; and if there be any of our readers who are still inclined to ask that superfluous question, What practical results has the microscope achieved? we may point, as illustrating its powerful aid in diagnosis, to the examples cited by Dr. Bennett. Let us take one among many:—

> "An elderly lady conceived herself to be affected with insects continually forming in the skin, which produced incessant itching and tingling. All the hair was removed, and every kind of application, including mercurial preparations, were tried without effect. On rubbing the surface she always saw minute white rolls and black specks, which she regarded as insects in different stages of development. The torment and anxiety this caused her for many months it is scarcely possible to conceive. At length she labored under the idea that she was communicating the disease to her husband and daughter, when, at the request of her medical attendant in the west of Scotland, she came to Edinburgh, in order that I might investigate and treat it. I had the pleasure of showing this lady, under the microscope, that the white bodies were minute rolls of epidermis, or of the cotton cloth with which she rubbed the skin, and that the black specks were portions of dust or soot. Her hallucination being in this way dissipated, she returned home perfectly well."

In a clinical examination of the blood, of the sputum, the milk, and the secretions generally, we possess in the microscope the surest and most reliable, we might say the only reliable method of arriving at accurate results. These subjects are here most appropriately discussed, and the different minute appearances of secretions and discharges well delineated; we except Fig. 73, representing urate of ammonia, the granules of which are, to our eye, entirely too large and out of proportion.

The second section of the work, treating of the Principles of Medicine, commences with several chapters which more properly belong to the Institutes of Medicine. Thus, we have a chapter on the General Anatomy and Physiology of the Nervous System, in which cognizance is taken of the investigations of Owsjannikow on the minute structure of the spinal marrow. It is followed by some remarks on the general pathology of the nervous system, maintaining the old doctrine of Monro of the amount of fluid within the cranium always being the same. Dr. Burrow's researches on the subject, and their explanation, are therefore not adopted. But while, of course, we cannot find fault with this, we must object to the statement that by a misconception of the older views on the part of Dr. Burrows, he has only contrived to overthrow a doctrine of his own creation. The doctrine he attempted to overthrow was certainly the one (until recently) very prevalent and usually adopted, that there was always an equal amount of blood in the brain. It was a doctrine which had been sanctioned by Abercrombie, Kellie, Clutterbuck, and Watson. This, at least, we think any candid reader of their recorded opinions will believe them to have expressed. Now, Dr. Bennett maintains that they meant *fluid*, and not *blood*. With reference to the prevalent opinion, and to that of the distinguished men cited, we cannot admit this, although we think that Monro, the originator of the whole theory, may have possibly entertained some such view, as the following passage will prove:—

> "For, as the substance of the brain, like that of the other solids of our body, is nearly incompressible, the quantity of blood within the head must be the same, or very nearly the same, at all times, whether in health or disease, in life or after death, those cases only excepted in which water or other matter is effused or secreted from the blood-vessels, for in these a quantity of blood, equal in bulk to the effused matter, will be pressed out of the cranium."—*Observations on Structure and Functions of the Nervous System*, Edinburgh, 1783.

The study of *exudations* is of such importance, and comparatively so identified with the progress of modern medicine, that we looked with great interest to this portion of Dr. Bennett's work. And we have not been disappointed. Here and there may be a few statements to which exception might be taken; but a more concise and masterly exposition of these important points of pathology it would hardly be possible to find.

Exudations are divided into simple,—as they occur on serous membranes, on mucous membranes, or in areolar tissue, or in dense parenchymatous organs, and also simple exudations, as seen in granulating surfaces,—into cancerous, and tubercular exudations. In the last there is no disposition to perfect cell formation, but much to disintegration. The cancerous exudation is distinguished by its rapidly developing corpuscles and its tendency to organize a perfect stroma; while the first form may break down into pus or change into fibres, whose further development, if active, leads to permanent bands and growths. Taking, to use the language of our author, the products of simple exudation as a standard, we cannot fail to remark that, while the cell development of tubercle is below, that of cancer is above this standard; of the three kinds of exudations tubercle is the lowest, and cancer the highest in the scale.

What the ultimate cause is which produces this difference in the formative power of the exudation we know not. Dr. Bennett agrees with the majority of pathologists in ascribing the most important part to the diversities in the composition of the blood. But he also suggests that the elements which determine the constitution of the blood, as the digestion in the alimentary canal and the secondary digestion in the tissues, should be more carefully studied in reference to the different states of the exudations, since these being derived from the blood, the causes which determine the composition of this vital fluid must also possess a most important influence in determining the variety of exudation. All the primary morbid growths, themselves the development of the exudations, are ranged under nine heads:—fibrous growths; fatty growths; vascular growths; cystic growths; glandular growths; epithelial growths; cartilaginous growths; osseous growths; cancerous growths. They are well described, and illustrated with admirable wood-cuts; so, too, are the morbid degenerations of texture and the concretions. The latter embrace urinary calculi; a subject which it is not usual to discuss in works on clinical medicine. With regard, further, to many of the above-mentioned growths this remark will hold good.

The more correct views held with reference to most morbid processes have doubtlessly led to changes in our treatment of disease. Dr. Bennett believes that the great difference between our present therapeutics and those of former days is *alone* attributable to the more intimate knowledge of disease. That the advance of medicine, both in ascertained facts and in correct application of principles, within the last twenty years has been unparalleled, no educated physician will for one moment deny. This advance is our pride. Who will gainsay that the careful examination of morbid processes and tissues has taught us much of the natural history of disease, and has cured much of the evil of overdosing? Who does not feel grateful at this result? But whether there has not also been an intrinsic change in disease, thus calling for different remedies, is a question which first requires to be solved, and which has involved our author in a heated controversy, carried on by able argument and industry by him, as well as by his noted opponents. He sums up here in his lectures much of the ground he has been over in his statements in medical journals; and a question of such vital importance to the profession we feel ourselves bound to touch upon, regretting that the necessary limits of a review will forbid us from following the arguments in detail.

But let Dr. Bennett state his own case :—

> "Even to enumerate the changes which have recently taken place in medical practice, as a result of this mode of viewing diseases, would be here impossible. They will be referred to in the special part of the work. Two great facts, however, seem to me, from their universal importance, to demand attention at present. These are—1st. The diminished employment of blood-letting and other antiphlogistic remedies in the treatment of acute exudations or so-called inflammations. 2d. The power which it has been demonstrated may be exercised over certain diseases of innervation, through the influence of suggestion or strong impressions made upon the mind. Both these facts have recently excited great attention and discussion; their influence on medical theory and practice has already been great, and their explanation on scientific grounds seems to be called for with a view of establishing correct principles for our future guidance."

The second of these facts we will not further dwell upon; the first Dr. Bennett discusses, to illustrate the view already mentioned, in five propositions, viz. : 1st. That little reliance can be placed on the experience of those who, like Cullen and Gregory, were unacquainted with the nature and mode of detecting internal inflammations. 2d. That inflammation is the same now as it has ever been, and that the analogy sought to be established between it and the varying types of essential fevers is fallacious. 3d. That the principles on which blood-letting and antiphlogistic remedies have hitherto been practiced are opposed to a sound pathology. 4th. That an inflammation once established cannot be cut short, and that the only object of judicious medical practice is to conduct it to a favorable termination. 5th. That all positive knowledge of the experience of the past, as well as the more exact observation of the present day, alike establishes the truth of the preceding propositions as guides for the future.

The first of these propositions, Dr. Bennett argues, is proved by the fact that the former methods of recognizing inflammation were imperfect. The older physicians did not know that exudations of lymph and the diseased condition of a part constituted inflammation. Groups of symptoms "in accordance with the nosological systems of the day constituted inflammation; hence we are not to be guided by their practice." Such is his reasoning. But may it not be said, on the other hand, that although they did not understand the morbid anatomy of inflammation, yet their views of the symptoms accompanying it, derived from experience, could not all have been unreliable? They may not have understood as much as we do of the means of detecting inflammation; they may not have been able to have determined its exact seat; their knowledge of the minute changes was less. But who can affirm that they altogether overlooked most internal inflammations? who can say that they were so blinded as not to see that their therapeutics were never followed by good results; who can establish that these men, so distinguished by their sagacity, should have obstinately closed their eyes to the teachings of common sense? Dr. Bennett will not admit that the internal inflammations they treated were not injuriously influenced by the lancet, while at present many are. His proposition is, that inflammation is the same now as it has ever been. It terminates in effusion of lymph. "How can it be shown," he asks, "that any of these necessary changes have of late years undergone any modification? Are the effects which followed wounds received at the battle of the Alma different from those which resulted from similar injuries at the battle of Waterloo? Again, if a healthy individual now-a-days be exposed to cold or wet, and be seized with an inflammation of the lungs or pleura, is not the lung hepatized in the one case, and do not layers of organizable lymph form in the other in exactly the same way as formerly? If so, is not hepatization removed, and does not the lymph contract adhesions in the same manner now as in the days of Cullen and Gregory?" Now, granting that the essential local features of inflammation are the same, that exudation occurs now as it did then, it does not follow that the state of system is always the same. We see in different sections of this wide country pneumonia prevailing in such different forms, with such opposite symptoms, that although we cannot question that in all exudation takes place, he would be a bold man who would venture to affirm that the symptoms and state of system accompanying the disease in some parts of the Northern States are exactly the same as that low form of pneumonia so prevalent in some parts of the South. Again, in typhoid fever there are always local lesions, which are probably the same now as they were before the time of Louis; but are all epidemics of typhoid fever alike in the activity of the fever? It seems to us that Dr. Bennett does not sufficiently distinguish between the morbid anatomy and the symptoms of disease, between local and constitutional states.

The argument, too, with reference to wounds received on the field of battle, is contrary to the recorded experience of the most eminent of military surgeons. Larrey tells us expressly, that in some campaigns and under some circumstances wounds healed more quickly, or were accompanied by constitutional symptoms which at other times were not perceived. Even the local effects of injuries were not always the same.

"Les plaies d'armes a feu que nos soldats ont reçues en Syrie, aux extrémitiés superieures compliquées de fracture, sur tout celles de l'humerus, quoique pansées méthodiquement et avec soin, ont presque toutes été suivies d'articulations accidentelles." * * * *

"Il est encore arrivé, dans cette même campagne, que de tres légeres blessures aux épaules, sans lésion des os, ont été suivies, chez presque tous les militaires qui les ont reçues, de paralysie complète ou incomplète du membre correspondant à la blessure, ce qui n'arrivé presque jamais en Europe, à moins que les principaux nerfs ne soient coupés ou désorganisés."—*Larrey: Relation Historique et Chirurgicale de l'Armée d'Orient.*

The analogy derived from the varying type of fever, an argument most ably urged against the proposition of the invariable similarity of inflammation by the venerable Emeritus Professor of Medicine in Edinburgh, Dr. Alison, Dr. Bennett will not admit. But why not? Bleeding was as much practiced for fever as it was for inflammation, and has been more completely abandoned. Why, if it can be proved that the symptoms of fever are at one time activity, at others depression, should it not be admitted that there may be unknown circumstances modifying the symptoms accompanying inflammation? Dr. La Roche, in his work on Yellow Fever, tells us that this disease assumes at times a sthenic, at others an asthenic form; and it is a very interesting feature of this controversy, that a colleague of Dr. Bennett's, teaching in the same hospital, practicing in the same city, has of late* come forward and proved, by notes he had kept of the epidemics, the changes which have taken place in the constitution of fevers in Edinburgh during the last forty years. "During the epidemic fever of 1817–20," says Dr. Christison, "the fever, with such a vivid reaction, demanded some sedative. Blood-letting, the most powerful and certain of all, was resorted to; and such were the good effects apparently obtained with it, that it soon came into universal credit, and was carried to what will very naturally now seem extravagant lengths." In a dissertation, written in 1819, we find that the fever was rarely stopped until twenty to thirty ounces of blood were removed, and much more was occasionally taken with the most beneficial results, ("et aliquando e viro procero, forti, et toroso, tres librae, vel amplius, insigni cum beneficio eductæ sunt.") In a lecture, written in 1835, Dr. Christison says,—"To conclude, in former epidemics of fever in this city, the prevailing type of the disease was inflammatory reaction; in the later epidemics, the prevalent character has been nervous depression. And, accordingly, if free depletion was the principal remedy in the former instance, the main remedy in the latter has been wine, with other stimulants."

This was written by a practicing physician long before this controversy began. Bleeding was abandoned in fever because it was found not to answer, and not because we understand the nature of fevers better; for who can affirm that the pathology of fevers is so well understood now as to have so materially modified our practice? There is no reason why this should not, to some extent, hold good with regard to inflammatory diseases.

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* Edinburgh Medical Journal, Jan. 1858.

But a point arises here which we believe to be more susceptible of proof, and of greater importance in solving this question, than the invoking of a change of type of disease at large. It is this: the recorded experience of nearly all our writers is derived from hospital and city practice. Now, is it irrational to conclude that the different social and other conditions we are now living in, with the continued rack of brain and body, may have so influenced the large masses living in cities or in certain districts as to have rendered active antiphlogistics less well borne? Thus, in some parts, from certain influences, undeniable changes have taken place; they are those from which mostly observations are published. This, we think, may be maintained without believing in a general change of type. The state of system, then, not the disease itself, forbids antiphlogistics, and the state of system is determined by special causes.

How these act, we know not. We are aware that anxiety, grief, hygienic, and atmospheric influences have a powerful influence on individual constitutions. We may go further, and suppose (and thus a general change in the type of disease could be accounted for) that at times, in the history of mankind, there may be causes, known or unknown, which powerfully influence us all in health, and in the way in which disease affects us; that there are, to use the beautiful expression of Dr. Watson, waves of time through which the sthenic and asthenic characters of disease prevail in succession, and that we are at present living amid one of its adynamic phases.

The third and fourth propositions we need not stop to inquire into; for, after all, they are, to a great extent, embraced in the last proposition—how far we can determine from experience what is the value of antiphlogistics in acute inflammations. The question of blood-letting and of antiphlogistics is a clinical question, and their value must be decided on clinical grounds, without any reference to prejudged views of their action. Dr. Bennett has taken pneumonia as his standard, and all his remarks and facts, carefully and admirably ascertained as they are, would certainly tend to prove that this disease, as he meets with it, is better treated without than with bleeding. Without mentioning the antagonistic facts which some of his opponents have published concerning the treatment of pneumonia, we would protest against the whole method of reasoning. We will grant that Dr. Bennett has proved much with reference to pneumonia, and is entitled to thanks for so doing; but he has done nothing more; and we declare against the whole question of the use of antiphlogistics being decided on the ground that they do no good in pneumonia.

It is not right to make one inflammation the standard by which to judge all. Let it be *clinically* ascertained that in inflammation of all organs blood-letting and antiphlogistics are not beneficial, and they will be discarded; but because the lancet is useless in pneumonia its value in other diseases is not impaired. It may not cut short diseases, as has been supposed, but does it follow that it has done and does no good? If we were to set aside all but the remedies that cut short a disease, how many would we have left out of the entire materia medica? Blood-letting is but a remedy, like digitalis or any other, and is to be treated as such. It has been potent for evil, and frightfully abused; but, in considering its use, we ought not to forget that our forefathers employed it, when now we resort to aconite and other sedatives, with whose action they were either entirely unacquainted or of which they understood but little. It is thus a remedy which they used, for which we possess substitutes which they did not know of. It seems but fair to bear this in mind when we take into account how often, and, according to our present ideas, how needlessly, they abstracted blood.

We repeat, however, that the whole question of antiphlogistics seems to us an entirely clinical one, to be solved only by observation, and not by reference to any views derived from the doctrine of cell-growth, of which we know so little. From its study, and by tracing out the natural history of disease, immense good may be expected. We shall learn more and more when to abstain from interfering, and when to assume an active part; when to sustain, and when to depress. The improvements in diagnosis have, and must enlarge our horizon more and more, and experimental observation of all remedies, the natural phases of diseases being perfectly understood, will teach us their exact value and application. But while, at present, we are not to be guided entirely by former experience, it is not right to eschew it entirely, and to declare against every depressing agent: it also is not inconsistent to admit that when an antiphlogistic plan of treatment was formerly so much more practiced, it was also really more called for. It is more creditable to the advance of knowledge, and to the reputation and honor of our profession, to uphold this view, and we cannot see that Dr. Bennett has advanced any facts which disprove it.

The agitation of this subject will doubtlessly lead to many valuable observations. It has already called into the lists Watson, Alison, Christison, and a number of less renowned champions, and is, for the most part, conducted with spirit and in a courteous manner. Here and there a little acrimony has been introduced; but Dr. Bennett possesses no ordinary skill, and it is better to meet so good a warrior, when in arms, in a friendly tournament, than to defy him to combat by touching his shield with the point of the lance.

The remaining sections of the work are taken up with the consideration of the diseases of separate systems, commencing with those of the *nervous system.* Among its diseases none is more important than *softening,* and here it is, also, where the microscope is of such signal advantage. Softening is usually taught to be dependent on acute or chronic inflammation, or on obliteration and disease of the arteries. Our author, from the analysis of numerous cases, has come to the conclusion that it may originate in six ways: from exudation which is infiltrated among the elementary nervous structures; from a mechanical breaking up of these structures by hemorrhagic extravasations, whether in mass or infiltrated in small isolated parts; from fatty degeneration of the nerve-cells, independent of exudation; from the mere imbibition of serum, which loosens the connection between the nerve-tubes and cells; from mechanical violence in exposing the nervous centres; and from putrefaction. It is impossible to distinguish these forms with certainty without the aid of the microscope, as the cases cited abundantly prove. We may, in truth, go further, and say that without its use, notwithstanding the presence of symptoms of softening during life, the very fact of the existence of this lesion may elude the close search of one whose eye is accustomed to look at morbid structures.

In cases of exudative or inflammatory softening the morbid mass contains numerous granules and granule-cells, which are seen coating the vessels or lying diffused between the tubes. These cases present also a marked contrast, clinically, to those in which the softening is not connected with inflammation. Thus, in twenty-four cases in which Dr. Bennett observed cerebral softening, eighteen presented the granular corpuscles, and were, therefore, presumed to be cases of exudative or inflammatory softening. In these persons well-marked symptoms invariably existed, such as loss of consciousness, preceded or followed by dullness of intellect, contraction and rigidity of the extremities, or paralysis. In the six cases of non-inflammatory softening there was no paralysis or contraction, and no dullness or disturbance of the intellect. In four cases, in which both lesions were present, symptoms could always be observed on the side opposite the inflammatory softening, but none existed opposite the non-inflammatory.

We are unacquainted, from its occurring but rarely pure, with the symptoms of fatty softening. Nor is it easy always to separate cases of chronic exudative softening from those resulting from hemorrhage. The suddenness of the attack in hemorrhage, and the more gradual signs of disturbance in the mental function, or in motion, in chronic inflammatory softening, are elements of the utmost diagnostic significance. The frequent complication, however, of chronic cerebral softening with hemorrhage, tends to obscure our landmarks, while, on the other hand, the exudative process occurring around the hemorrhage renders a correct diagnosis sometimes almost impossible. The researches of Dr. Todd have thrown some light on this difficult subject, and, it is to be hoped, will gradually clear it up.

Another point involving great difficulty in diagnosis is the distinction between acute *cerebritis* and *meningitis.* The only differences perceptible, when the substance of the brain is affected, are marked convulsions and paralysis, and a less degree of delirium, somnolence, and stupor. The latter is a disease of more frequent occurrence: Dr. Bennett records several interesting cases (Cases V. and VI.) of simple meningitis in tubercular persons. In the treatment of meningitis, as might have been expected from so zealous an adversary to the depressing treatment, antiphlogistics do not meet with much support. Nor has Dr. Bennett derived much advantage from the treatment of paralysis by strychnia. In cases of paraplegia, he believes it to have increased the patient's debility. Phosphorus, so much vaunted, did not succeed better. For the relief of functional nervous disorders the usual practice of administering tonics is firmly adhered to. We find in this part of the work several very instructive cases of poisoning by lead, opium, and hemlock, and also a useful classification of functional nervous disorder. There is but one point in it to which we would object, as likely, without explanation, to lead into error,—it embraces apoplexy. We suppose that this is meant to apply solely to those exceedingly rare and doubtful cases of nervous apoplexy, where post-mortem examination has failed to discover even any of the phenomena of congestion.

The diseases of the *liver*, involved at one time in such obscurity, are now better understood. This is certainly true of their pathology, and to a more limited extent of their therapeutics. The indiscriminate use of mercury has, nevertheless, retarded our knowledge of the use of other remedial agents in hepatic diseases. Iodine in chronic hepatitis has been of late years much employed; and we subjoin the following case as instructive, from proving not only its remedial effect even after mercury has failed, but also the possibility of entirely removing chronic enlargement of the liver and Bright's disease which accompanied it. The latter result was achieved by diuretics, which Dr. Bennett regards as the most certain of the remedies for this affection.

"HISTORY.—David Harper, aged thirty, painter, admitted into the clinical ward, February 18, 1852. Four months ago, was seized with diarrhœa and vomiting, which have continued more or less ever since. The liver was first observed to be enlarged in the beginning of December last, and it has gradually increased in size up to the present time. He has taken numerous remedies to check the diarrhœa and vomiting, but with little effect.

"SYMPTOMS ON ADMISSION.—On admission, the liver is found to extend from one inch below the right nipple above to within an inch and a half of the anterior superior space of the ilium below,—a depth of nine inches. From this point its margin could be felt ascending obliquely upward to the most depending portion of the ninth rib on the left side, crossing about an inch above the umbilicus. There is distinct fluctuation to be felt throughout the rest of the abdomen, indicating ascites. In the right lumbar region the enlarged liver is tender on pressure. The abdomen measures thirty-two and a half inches in circumference at its widest part. Spleen of normal size. Tongue moist, slightly loaded. There has been no vomiting for some days, but the diarrhœa is very severe. Says he has frequently passed blood by stool. Skin not jaundiced, but rather dry. Respiratory, circulatory, and other systems normal. ℞ Pil. Plumb. et Opii., xij. *Sumat unam ter indies.*

"PROGRESS OF THE CASE.—*March* 4.—Has had occasionally vomiting and diarrhœa since last report, for which he has been taking at times the naphtha mixture, morphia draughts, and gallic acid. To-day the urine is somewhat scanty, and slightly coagulable on the addition of heat and nitric acid; spec. grav. 1024. ℞ Acetatis Potassæ, ʒj; Sp. Æth. Nit., ʒij; Syr. Aurantii. ℥j; Aquæ, ℥v, M. Sumat ℥j ter indies. *March* 12.—To-day the urine was ascertained, with the microscope, to contain numerous casts of the tubes and isolated epithelial cells loaded with fatty granules. The vomiting and diarrhœa continue. *Habeat suppositorium quaque 8va hora.* *April* 6.—The diarrhœa was for a few days somewhat checked by the suppositories, but gradually returned, and is now very severe; the bowels having been opened twelve times yesterday. The urine has continued albuminous, and loaded with desquamative casts and fatty tubes. To-day its spec. grav. is 1007. There is now great debility, and occasional stupor and drowsiness. *May* 12.—The drowsiness has disappeared. For the last few days has been taking ʒj of the potass. bitart. with the mixture of acetate of potash and nitric ether, and he now passes a larger amount of urine, which is free of tubular casts. The abdomen is less tense. About the middle of May the vomiting and diarrhœa first abated, and was soon after checked. In August his health was so much improved that he was allowed to go out of the house for the benefit of air and exercise. He was readmitted *September* 13, having enjoyed tolerable health in the interval, although the hepatic swelling is about the same size. He was now ordered, ℞ Hydrarg. Proto Iodidi, gr. vj; Pulv. Opii, gr. ij; Ext. Taraxaci, ʒss; Conserv. Rosarum, gr. v, fiant pil. xx. Sumat 1 ter indies. These pills on the 20th produced salivation, when they were discontinued, and an astringent gargle ordered. The abdomen now measures thirty-six inches in its broadest circumference. *Oct.* 25.—Complains of oppression on walking, of shooting pains through the chest and abdomen. Ascites seems once more to be increasing. *Tr. Iodini to be painted over the abdominal surface.* *Nov.* 21.—Since last report the liver has greatly diminished in size, and his complaints have ceased. The urine presents a slight hazy albuminous appearance on the addition of heat and nitric acid, but is voided in natural quantity. *Dec.* 13.—The liver is now so reduced in size that its lower margin is only two inches below the false ribs in front, and one inch on the right side. All his functions are apparently healthy, the urine healthy, and his strength appears perfectly re-established.

"He has since been seen by the clerks walking about the town, and has informed them that he is quite well and carries on his occupation without any inconvenience."

In the chapter on diseases of the *digestive* system we find mention made of the decoction of the unripe fruit of the Indian Bael, better known as the Bengal Quince, as an exceedingly valuable astringent in the treatment of chronic diarrhœa and dysentery. The decoction must be used fresh, and is prepared by simmering two ounces of the unripe fruit in a pint of water down to a fourth, of which from one to three tablespoonsful constitute a dose. We also find a most instructive case, in a diagnostic point of view, of cancer of various abdominal organs producing all the symptoms of acute peritonitis, including great tenderness, with distension of the abdomen, and fever; the fluid and the tympanitis masked the nodular swellings found after death.

In the treatment of *pericarditis*, mercury does not meet, in the hands of Dr. Bennett, with the favor usually accorded to it. Since the days in which Graves expressed his conviction that all our efforts must fail unless a speedy mercurialization be produced, this remedy has been considered as the most important in the removal of pericardial inflammations. Its efficacy was questioned by the late Dr. Taylor from an analysis of forty cases. Dr. Bennett adopts his conclusions, and states that, after having administered it in many cases, he could never satisfy himself that it had the slightest influence in forwarding or modifying the natural changes which occur. Yet few of the cases he has recorded are pure, most being complicated with other affections, many with disease of the lung or heart. It may, however, be very justly urged that uncomplicated pericarditis is among the rarest of clinical phenomena. In sixty-two cases recorded by Bamberger (Virchow's Archiv., vol. ix.) only three cases of pure pericarditis are met with; and Dr. Bennett might cite this very paper as confirming his views, since of twenty-nine cases treated without a grain of mercury, only two died, one a woman of eighty-nine years of age, and the other was complicated with typhoid pneumonia. This same author reports the case of a hatter, the subject of mercurial tremor, who, notwithstanding his system was saturated with the drug, was seized with acute pericarditis.

The same objection to mercury, and indeed to any antiphlogistic treatment, is visible in Dr. Bennett's treatment of acute inflammations of the *respiratory* organs. Calomel in acute pleurisy and in acute pneumonia he believes to be worse than useless. His treatment is to further the natural progress of the disease by securing rest, avoiding lowering remedies, and administering salines and diuretics to favor excretion of the morbid products, and wine and nutrients, should the pulse be weak; local pain to be relieved by warm fomentations or poultices. If statistics can determine the superiority of this plan of treatment, they certainly would do so by overwhelming numbers; for we find but a mortality of one case in twenty-three, whereas the mortality by extensive blood-letting is nearly one in three, (Louis;) by large doses of tartar emetic one in five, (Rasori;) by moderate bleeding (Laennec and Grisolle) one in seven to ten.

The progress of a case of pneumonia may be for the most part accurately told by the absence or presence of chlorides in the urine. They disappear during its progress, they reappear at its cessation in company with the returning crepitation. A case of great interest, as bearing on this point, is the one cited, p. 638. It was that of a man, aged twenty-six, laboring under typhus fever, in whom on the eleventh day the chlorides disappeared from the urine. This led to an examination of the chest, when the signs of pneumonia were detected in the lower half of the right lung. On the fourteenth day the chlorides reappeared, and the pneumonic signs diminished.

In the treatment of the chronic diseases of the lungs, Dr. Bennett, as is well known, is an ardent supporter of cod-liver oil. The local treatment of chronic bronchitis by nitrate of silver is one he encourages.

Leucocythemia, or, as Virchow calls it, *leucæmia,* is a disease the knowledge of which dates from 1845. We do not wish to enter the arena for or against either of the rival professors who claim its discovery; we believe that our thanks are due to both. Bennett, as the date of his publication shows, was the first to draw attention and give an impetus to the whole subject; but Virchow just as undoubtedly was the first who understood the true nature of the cases. Bennett showed the presence of corpuscles in the blood unconnected with phlebitis and associated with enlargement of the spleen; but Virchow demonstrated them to be blood corpuscles, and proved that they might occur as dependent upon enlargements of the lymphatic glands, proposing, at the same time, the name of leucæmia, or white blood, for the disease. Not to enter further into this discussion,* we would say that Dr. Bennett has contributed most to the clinical study of the subject, and that the result has been the knowledge of a disease whose anatomical elements consist in an enlargement, usually a simple hypertrophy, of the spleen, a hypertrophy of the liver, and an enlargement of the mesentric glands, and sometimes of the thyroïd gland and supra-renal capsules; while its symptoms are a preponderance of white corpuscles in the blood, readily seen by pricking the finger, a pale complexion, cachectic appearance, a tendency to diarrhœa and dyspnœa, and usually the physical signs of enlargement of one or more of the organs indicated, and a progressive diminution of strength. This latter symptom is unfortunately the rule. Virchow says, "as yet no well-proved case of cure is known," and Bennett does not make a more encouraging remark when he states that "with regard to treatment, nothing that I have yet tried has appeared to be of the slightest service in well-marked cases with distinct glandular enlargements. Iron, quinine, chloride of potassium, hydriodate of potassa, and a variety of remedies given internally, with tincture of iodine applied externally, have been of no avail. The chief indications in advanced cases, however, will be found to be furnished by accidental complications, the most common of which are diarrhœa and epistaxis, which require astringents, combined with tonics, nutrients, and stimulants, to support the vital powers."

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* If any of our readers should wish to inform themselves at length as to the facts relative to the question at issue, we refer them to Dr. Bennett's statements in the work under review; to Kolliker's statement in the Edinburgh Month. Jour. of Med. Science, 1854; to the Dublin Medical Press; Vidal, Gazette Hebdomadaire, 1855; and to Virchow, in the seventh volume of his Archiv. fur Path. Anatomie.

Nor can the pathology of the disease be regarded as entirely settled, since it involves the whole question of the formation of the blood corpuscles. This much is certain, that the lymphatic and other ductless glands have a large share in their formation. But it has been supposed probable that the corpuscles are formed in the blood itself. Dr. Bennett's theory is that the colored blood corpuscles are free nuclei, sometimes coming as such from the glands, at others developed within colorless cells. These latter, the white corpuscles, are always derived from the lymphatic glandular system. In certain hypertrophies of this system the cell-elements are multiplied to an unusual extent, and find their way into the blood, constituting an increase in the number of its colorless cells. A corresponding diminution in the formation of free nuclei, and consequently of colored corpuscles, occurs. This is leucocythemia; and is also the best theory which the present state of knowledge of the subject offers.

Dr. Bennett explains the views with reference to the formation of blood corpuscles at some length. If we were disposed to be critical, we should say at too great a length. In a future edition we hope to see this and the controversy about the history of the subject somewhat abridged; and, considering these are clinical lectures, a less meagre and more satisfactory account of the symptoms of this strange disease substituted.

But we must here take leave of our author. We had marked for further consideration an account of his treatment of rheumatism by nitrate of potassa; of scabies without sulphur ointment; a substitute for mercurial plaster in smallpox, in the common calamine saturated with olive-oil; and a most astonishing case, which must have been a perfect *bonne bouche* for any medical student eager of wonderful cases, a person presenting a thoracic aneurism; an abdominal aneurism; the treatment of aneurism by Valsava's method; acute passing into chronic pleurisy; gradually increasing and at length complete paraplegia; and the most rapid death by aconite on record. We had marked these, and we might have marked many more subjects, without having exhausted the interest or the originality of this volume. We have indeed rarely met with a more thoughtful work; nor do we believe that there is one extant which in many respects better reflects the present advanced state of medicine. It is a pioneer treatise from one who has brought into a volume, abounding with interesting matter, the research and the illustration furnished by modern science, and has best urged its claims He may have arrived at conclusions which are premature or debatable, but the enlightened skepticism he displays, (although it would seem to us to go here and there too far,) and the thorough devotion to his subject, are worthy of the highest praise. The book is not merely one of reference, but one to reflect over. As a text-book to a student it may not be the best, as it is too unequal and incomplete; but as a book to take down from our shelves and frame our observations on, and learn how to throw light on daily practice, it is without a rival. The author tells us that when he finds time he will devote himself to the consideration of the pathology and causes of inflammation; we, his brethren on this side of the Atlantic, bid him God-speed in this difficult task.

ART. IV.—*Silver Sutures in Surgery. The Anniversary Discourse before the New York Academy of Medicine.* By J. MARION SIMS, M.D., Surgeon to the Woman's Hospital. (Published by order of the Academy.) New York: S. S. & W. Wood, 1858.

THE name of the orator here presented, and the theme exhibited in his title-page, naturally arouse more practical attention than is usually accorded to an ephemeral address. The reader, however, who expects to find in this extravagant and absurdly egotistical discourse a scientific study of the advantages and use of pure silver as a material for sutures, will be sadly disappointed.

A mere special plea for personal aggrandizement, with a tirade against competitors and the most cursory allusion to the original labors of his predecessors, are not the demonstrations to be looked for in a contribution to the progress of operative surgery, formally invited, as the author intimates, by the members of the New York Academy of Medicine.

The manifesto of Dr. Sims, in answer to that call, is certainly a very different conclusion from what was confidently expected in the first fruits of the rare opportunities of the Surgeon to the Woman's Hospital, and which might have been offered to the Academy as an honorable tribute to the humanity and wisdom of the founders of that charity.

Were it not before us, in the black and white of a printed pamphlet, published "by order," etc., and with all its *ad captandum* paraphernalia of pictures and staring capitals, we should try to regard its various peculiarities as the harmless frothiness of an after-dinner effusion, easily accounted for and as readily forgotten. As it is, however, there is so much which demands explicit contradiction, that we find it impossible to confine our notice within the brief space to which such emanations are alone entitled.

We have no inclination for the discussion involved in the examination of its remarkable pages, nor have we any desire to increase the already industriously extended notoriety of what has, doubtless, ere this, proved a source of mortification, as it is of discredit, to all concerned in its publication. We should gladly pass it by, along with the periodical issues of a very different but not less enthusiastic order of seekers for popular *éclat*, and would have little but surprise and regret to express in relation to its misrepresentations and assumptions, were it not for the previous distinction of its author, and the authoritative auspices under which it is put forth.

Under these circumstances we are compelled, in defence of a grossly assaulted contributor to this journal, and for the credit of American Surgery, so far as our position as journalists involves us, to deny the shadow of a foundation for the charge of bad faith so piteously urged against Dr. Bozeman, and to repudiate the bombastic pretensions of Dr. Sims as to the importance and reality of his alleged "discovery" of the silver suture.

We need hardly stop here to explain the position of this journal in regard to genuine American improvement in medical science, especially in practical surgery. It is not our intention to underrate the value of *metallic* sutures, or to dispute the merit, which belongs to Dr. Sims, of having introduced their more general employment in the management of wounds and plastic operations. Still less do we wish to detract from the honor due to him for the material advance in methodizing and improving the details of the particular operation to which he owes his professional success. It will not be difficult to show that, in these matters, Dr. Sims himself, in his anniversary oration, has proved his worst enemy, and the first one to attack the laurels which have hitherto been generally awarded to him, and by none more fairly and frankly than Dr. Bozeman. He does this so gratuitously, and in a temper so evidently the effect of jealousy, that we heartily lament his misfortune in having had no thoughtful friend to suggest to him, or his academy admirers, the maxim addressed to the cobbler of old.

Ne sutor ultra crepidam was never more applicable than to the course of the self-gratulating laureate of the "Silver Suture." His achievements, with the vaunted stitch and its accompaniments, were willingly accepted as a material accession to the triumphs of surgery, in behalf of suffering womankind under one of her heaviest and most disheartening afflictions; and the champion of the suture was hailed as a master, and requited in fair proportion to the good he had effected by his perseverance, ingenuity, and skill.

Not satisfied, however, with the brilliant reputation obtained through the legitimate account of his investigations and their then unparalleled results, he was tempted, by a dread of divided honors, to stoop to trumpet his "discoveries" and rail at his "followers," before a mixed audience, which must have been much more amused and disgusted than it could have been instructed.

In the midst of his success he had found a Mordecai at the palace-gate, whose humble but decided merit in the same field offended him. He waxed eloquent, not only in sounding his own praises "from the housetops," as he says, but in denouncing the troublesome competitor who had dared to improve upon his instruments and mode of operating. He strove to suspend this too fortunate rival on a gallows of professional disgrace by accusing him, without proof, and in direct contradiction to the published evidence, of ingratitude and plagiarism. In the effort to disparage the single but important step in advance, established by Dr. Bozeman, he perpetrates the folly of stripping his own operation of its characteristic features, by destroying the admirable combination of other men's methods, in which the superior advantage of his former plan consists; while he commits the very crime he would fasten on his quondam associate, by ignoring the inventions of his predecessors and clamoring for the sole credit of what he certainly did not originate.

We purpose to show that he acts very differently from Dr. Bozeman in his treatment of Mettauer and Levert, of this country, and of Dieffenbach, Velpeau, and others, abroad, by the magniloquent exaltation of his own genius at the expense of their rights; and that he even deigns to appropriate a hint from the arch offender, Dr. Bozeman, himself.

Let us not be misunderstood as to our view of the right of property in scientific inventions and their application. We acknowledge little interest in the vain and petty quarrels for precedence in the honor of inventing new instruments and modes of treatment, or even in the discovery of scientific truths. After all, he is the greatest benefactor who succeeds in teaching his fellow-men the actual use and value of a new step in art or science, whether or not his happens to be the first glimmer published or put on record, much less imagined, of its existence or availability. This is virtually the world's verdict, in spite of the often-repeated reclamations for theoretical priority which are so vehemently asserted at the eleventh hour; and we believe it is the just one. But the true leader of humanity, whose intelligence and energy have enabled him, by outstripping others, to win the prize, can well afford to acknowledge the advance already proposed by his less active predecessors, and the aid he may have derived from their suggestions; nor has he anything to gain from an attempt to stultify his own advance, and bar further progress, by resisting improvements on himself, although those improvements may throw his "into the background."

> "SILVER SUTURES IN SURGERY," says Dr. Sims, "is a subject that necessarily involves frequent and constant reference to my own labors and their results; indeed, it has been the theme of my life for the last twelve years. In selecting it, I am not ignorant of the delicacy of my position, and of my liability to be misinterpreted, and to be criticised by some who do not know me as you do. Nevertheless, I shall speak as an American—plainly, frankly, and fearlessly, feeling that you and the great mass of the profession will understand and fully sustain me. So far as it concerns my experience, personal narrative, claims as a discoverer, or defence against aggression, I have a right to declare them openly 'from the house-tops;' and for this, in the abstract, I hold myself responsible. But whether the subject-matter will be considered quite appropriate for the occasion, is a question only for the fastidiously censorious; and I shall dismiss that very summarily, by shifting its responsibility to the broad shoulders of the gentlemen just named, at whose solicitation I stand here to-night."—pp. 7, 8.

We should be very loathe to believe that the distinguished members of the Academy of Medicine, here alluded to, would knowingly subject themselves to such a burden as Dr. Sims has cast upon them, in return for their good-natured confidence in his sense of propriety as well as professional experience. We shall not question their opinion as to the fitness of the "subject-matter" for an audience containing many men and women incapable of understanding anything about it, except the revolting and once hopeless nature of an infirmity to which one sex is liable in its most important functions, and the vast debt of gratitude which both sexes owe to the individual before them for the "only genuine cure." But we do not believe that these officers of the Academy can contentedly accept the compliment which thus compels them to indorse the self-glorifying appeal, over their shoulders, to a miscellaneous assembly. It is far too likely to remind them of the large-lettered exhibitions which are suspended from the backs of a much humbler class of peripatetics in their public streets.

Not having the fear of the speaker or his sponsors before our eyes, we do not hesitate to range ourselves among the "fastidiously censorious;" and we venture to express the hope that the hitherto interesting series of annual mementoes, which began so well with Dr. Francis and had reached a climax not easily surpassed in the scholarly address of Dr. Watson, may cease altogether, rather than that such perversions as this of Dr. Sims should be allowed to threaten the well-earned fame of the Academy.

> "You who are familiar," continues our author, "with the experience of that noble charity, the Woman's Hospital, will not be surprised, when I declare it as my honest and heartfelt conviction, that the use of SILVER AS A SUTURE IS THE GREAT SURGICAL ACHIEVEMENT OF THE NINETEENTH CENTURY.
>
> "For my country I claim the honor of this imperishable discovery, and seize this auspicious occasion to place permanently upon record a history of its origin and progress.
>
> "Many of you already know that it was not the result of mere accident, but of long, laborious, and persevering effort, based upon the immutable principles of science, and forming one of the most beautiful examples of inductive philosophy.
>
> "Wishing to impress upon the profession its importance and value in general surgery, as well as in injuries from protracted parturition, I shall necessarily be compelled to draw largely and somewhat minutely upon my past experience. But this will be readily tolerated by a liberal profession; for, while I labor to establish principles, it will be legitimate to refer to dates, and times, and places, and persons, and circumstances, all of which are necessary, to place forever beyond cavil my claims and agency in this discovery.
>
> "In 1845 I conceived the idea of curing vesico-vaginal fistula, and entered upon the broad field of experiment with all the ardor and enthusiasm of a devotee. After nearly four years of fruitless labor, silver wire was fortunately substituted for silk as a suture, and lo! a new era dawns upon surgery.
>
> "This was on the 21st of June, 1849, since which time I have used no other suture in any department of surgery."—pp. 8, 9.

In another part of the pamphlet, after assuring us that every case of vesico-vaginal fistula "is easily and perfectly curable that has tissue enough to render any operation whatever practicable, while a failure is the exception to the rule," and that there is in these operations "not the least risk to life," he raves on in the following strain:—

> "I am not claiming too much for this suture when I say that the same relative result must be attained in all other surgical operations requiring sutures, if the same method be adopted.
>
> "My language is in nowise extravagant; and I shall yet live to see the day when the whole profession of the civilized world will accord to this simple discovery the high position of being the most important contribution as yet made to the surgery of the present century.

> "The only thing at all comparable to it is Etherization; and in practical results of permanent benefit it is absolutely contemptible, when compared with those from the universal use of silver sutures in the broad domain of general surgery."—p. 46.

In the foregoing extracts Dr. Sims has the benefit of a sufficiently full statement, *verbatim et literatim*, of his position on the suture question. Let us see what is his idea of the right of ownership in the grand invention.

> "As concentrated efforts have been made in various quarters to rob me of full credit for my labors, I have thought it due to truth, to justice, to posterity, and to myself, to place permanently upon record a history of the circumstances attending this discovery."—p. 46.

These various moral, personal, and prospective interests are then duly sustained in a long and extremely characteristic "personal narrative," which cannot fail to divert and astonish the reader as much as it interests him. For the present we pass over the details of the early efforts, the gradual but laborious unfolding of new plans, the numerous discouragements but steady progress toward improvement, and the crowning triumph to the years of toil, which do him so much honor. Some excitement may be well excused in one who chronicles the checkered fortunes of a struggle fraught with so much that is laudable in its conception and career. But the vain-boasting and unfairness of our hero provoke a sifting of his story, and lead us to seek human agency for the sources of inspiration which he describes as "Providential." This agency may be fairly attributed to Wurtzer, Chelius, Velpeau, Dieffenbach, and Churchill, and to Hayward, Mettauer, and Pancoast, whose different suggestions and expedients afforded the needful hints to choose from, without the necessity for higher revelation. The real heroism is to be found in the all-trusting women who went on with never-failing fortitude, enduring trial after trial, to enable this one man to work out upon their lacerated bodies an almost hopeless problem which was to determine the life-long happiness or misery of multitudes of their sex. Theirs was the great act; and, much as they have gained in the escape from suffering, let them still share the praise. This share is graciously allowed them by Dr. Sims in the following strain:—

> "To the indomitable courage of these long-suffering women, more than to any one other single circumstance, is the world indebted for the results of these persevering efforts. Had they faltered, then would woman have continued to suffer from the dreadful injuries produced by protracted parturition, and then should the broad domain of surgery not have known one of the most useful improvements that shall forever hereafter grace its annals."—p. 55.

To return to our "narrative;" after years of fruitless experiment he finally imagined that the only remaining obstacle was in the irritating action of the material of the suture.

> "Now, the question arose, was there a substitute for silk that would answer the same purpose, and yet not poison the animal tissue? Why, lead remains indefinitely in the body, becomes sacculated, and produces no poisonous or suppurative effect; Dr. Levert, of Mobile, (*Am. Jour. Med. Sci.*, No. VII., May, 1829,) had demonstrated the innocuousness and efficiency of leaden ligatures on the arteries in the lower animals, and Mettauer and Dieffenbach had actually used leaden sutures in these very cases; and I had in my various experiments tried them in two cases of vesical, and one of rectal fistula, but, fortunately for science, the clumsy leaden wire was unsuccessful in my hands. Was there any other metal that could be substituted for lead, possessing its valuable property of harmlessness?
>
> "In the train of inquiry what would be more readily suggested to the reasoning mind than silver, gold, and platinum?"—pp. 59, 60.

He tells us he has used all of them, but adopts the silver, "because it is as good as gold, and cheaper." Just at this crisis he happens "to pick up a piece of brass wire that had been used in a pair of old-fashioned suspenders made before the days of India rubber; it was fine as ordinary sewing thread." He got a jeweller to imitate this in silver; and, on the 21st of June, it was applied, with leaden bars and the perforated shot, to a young colored woman, who "had never murmured at the preceding failures," and was "placed on the operating table for the thirtieth time."

> "In all previous operations the urethra, in a day or two, would become red and tender, and the urine loaded with thick tenacious mucus, thus showing the inflammatory process, which was adverse to union; but after this operation, the urine remained perfectly limpid all the time, and on the eighth day the parts were perfectly healed; the suture apparatus remaining just as it was placed, with the cross-bars somewhat burrowed in the vaginal tissue." At last he had attained what he had "worked for for nearly four years; and it was but a few weeks before all the cases were cured that had been the subject of experiment for so long time."—pp. 60, 61.

This termination of his gropings was happy enough, one might suppose, to admit of some little gratitude to the few investigators whose previous inklings and recorded experience were entitled to at least as much notice as the old suspender wire. He mentions Levert, as having experimented on arteries with *leaden* ligatures, but neglects to tell us that Levert experimented with *silver, gold, and platinum wires, as well as lead.* He might have remembered, too, that silver wire was long ago advised and used by a member of the New York Academy, (Dr. J. Kearney Rodgers,) as a suture between fragments of bone, and has ever since been familiar to American surgeons. Whether or not it is new as a suture for soft parts, its employment as a means of retaining fragments of bone in apposition dates at least as far back as the eighteenth century.

This question, however, is of trivial importance; we should not have mooted it with one less grasping in his demands, and more liberal to his neighbors in minor matters, than the author of this address. Dr. Sims deserves and receives the usual credit for developing the advantages of the metallic suture, and for urging its application in many cases in which he was, doubtless, the first to resort to it and demonstrate its value. An ingenious modifier and manipulator, untiring in the pursuit of the required expedient, and able to appreciate its application, he certainly is; but, with all this inventive capacity, he has yet to establish a foothold in the field of independent scientific "discovery."

Admitting, then, his position as the author of silver suture surgery, we still want to know what mysterious virtue there is in virgin silver to make it the *sine qua non* in keeping wounds in proper order. How has it been shown that cheaper, more pliable and stronger metals are not equally available, or cannot easily be made so by coating with silver or with other unirritating material? Galvanic action might interfere, but who has shown this? If it be true that metallic ligatures or sutures are in all cases preferable to animal or vegetable—which we beg leave to doubt exceedingly—then let iron, the cheapest, strongest and most pliable when finely drawn, be fairly tested, with and without a covering. We have tried electro-plated iron wire and found it more delicate and convenient than the silver wire which had been provided for the case. We doubt the necessity, however, of plating the iron wire at all; it might be tinned, but would probably do just as well uncovered, since the common twisted suture needle has been long enough in use, in hundreds of delicate plastic operations, to prove its unirritating qualities and freedom from injurious oxidation. Copper, (the best for plating,) tin, and aluminum, also demand a trial, as well as iron and lead.

Dr. Sims refers to lead as having been employed by Mettauer and Dieffenbach; but, although unwilling to say anything of the labors of these operators, he quotes his own failures with their suture only to disparage it, and dismisses it as "clumsy." These negative results and the cavalier dismissal can hardly counteract the authority of Mettauer and Dieffenbach. (See Mettauer's cases in *American Journ. Med. Sci.*, January, 1833, and April, 1837; also Dieffenbach in same Journal, Nov. 1838.) Nor does the idle epithet indulged in affect the applicability of the vulgar metal, *when properly prepared and handled,* to all the legitimate functions of the more stylish substitute of Dr. Sims; still less does it deprive the leaden thread in the hands of Mettauer and

Dieffenbach, of the post of honor, such as it is, in the van of the metallic sutures.

We have neither time nor space to follow Dr. Sims in his harangue upon the vastly superior action of his silver suture in various surgical cases, or to examine into the need of any kind of suture in many of the dressings for which he recommends it; nor do we wish to reopen the very old debate upon the good and bad effects of silken sutures, which has been going on, with frequent fluctuations but no material practical conclusion, ever since the time of Pibrac and Louis, of John Hunter and John Bell. The new turn and impulse to the discussion, given by the fancy of Dr. Sims, is of less importance to the management of external wounds in these days of collodion and isinglass adhesive strips; and yet suggests a good deal of experimental inquiry which ought to be pursued, and which would have added greatly to the value of his paper.

So much for the first object of the anniversary address. The second seems to be to demolish Dr. Bozeman and his "button suture," which latter had become a stumbling-block to Dr. Sims.

This branch of the argument begins, directly after the grand announcement of the dawn of the "new era,"—the silver age of surgery,—with a reference to the speaker's article, in the *American Journal of the Medical Sciences*, on "The Treatment of Vesico-Vaginal Fistula," as containing the first revelation, in the shape of "full and specific directions for every stage of the operation." "The silver suture as then used," he says, "I called the 'clamp-suture,' on account of its method of action in forcing or 'clamping' firmly together the surfaces to be united." He then describes the component parts and the action of this quondam clamp arrangement, and gives a wood-cut in illustration, "merely for its historical value, and to show the progress of improvement."

Everybody understands that the new surname of *clamp*, thus given to an old form of suture, was very generally received, because it does convey a better idea of the well-known action of the quills, and because it represents a neat improvement of the primitive cylinders, which the author of the name had unquestionably contrived. We are sorry to see the Doctor thus casting off what, in spite of his own protest, will continue to be regarded as an inseparable feature of his particular method. Whether superseded or not by other appliances, in addition to the metallic suture, it cannot be replaced, either in name or function, by the suture in itself as the only essential part. The clamp, although applicable only to fistulæ of Velpeau's second and third classes, and utterly unfit for his first and for the fourth and fifth of Bozeman, has done too much good service in other hands, as well as those of Dr. Sims, to be altogether set aside at this stage of its history. Yet Dr. Sims assures us (p. 21) that "the great success of these operations" [including Bozeman's,] "is due entirely to the silver wire. I had long ago demonstrated, over and over again, that the clamps or leaden bars and perforated shot were totally worthless, if used with silk as a suture; in other words, that the silver wire was the essential part, the *sine qua non* of success." After adverting to some disparaging experience with Dr. Bozeman's suture, in which he appears to have been strangely awkward and unfortunate, he informs us that "seeing thus that the much vaunted button was obnoxious in some cases, and nugatory in others, I now began a series of experiments with the wire as an interrupted suture, without 'clamps' or 'buttons,' so-called." He had found it excellent in general surgery; and he saw no good reason why it should not answer equally well in the management of the fistulæ on which he was then engaged. It was accordingly applied on the 24th of June, 1856.

This was about six weeks after the intruding "button" was presented to the profession, and betrays an awakening sense of weakness in the clamp, which, until the entrance of the new light, its cautious advocate had not ventured to indulge. Similar experiments, however, had been long ago performed with promising success by Dieffenbach and Mettauer, the only difference being that they used lead, which we believe to be better than silver as an interrupted suture.

Curiously enough, and very unhappily for his own way of thinking from the *suum cuique* stand-point, the first steps of his revised plan of operation are precisely those of Dr. Bozeman; while the twisting of the wires which completes the union, as also the method of withdrawing them, are the processes of Mettauer; except that the wires are cut off by Dr. Sims, whereas Mettauer, although he cuts them off in staphylorraphy, more wisely leaves them long enough to reach the entrance of the canal. The wires are drawn together by an instrument shaped and cleft like the broad end of a French director, which is evidently a modification of Bozeman's adjuster. In short, the new "operation" is another very pretty illustration of the adaptive power of our enterprising but too captious orator. We acknowledge that these are very little matters of dispute;—as unbecoming to the pages of a respectable review as they are to those of a scientific essay or annual address. Our object, in dwelling on such questions, is simply to suggest to Dr. Sims, in future discussion of other men's labors in a field which is still open to all, an application of the golden rule.

To return to the story of our amiable and modest author:—

> "In my own hands," he continues, "this method of using the silver wire" [*i.e.* with clamps and shot,] "in vesico-vaginal fistula, was uniformly successful, because I always took good care to make a broad and free scarification of the

edges of the fistula, and to pass the sutures so far from them that the cross-bars or clamps would burrow in the vaginal tissue, there to remain till the case was permanently cured. But my followers were not so successful, simply because these two important points were not fully appreciated. They complained that the sutures would cut out; a thing that never happened with me in but three or four cases, and they were among my first experiments, before learning thoroughly the art of applying them."

Dr. Sims here forgets his own experience, especially as recorded in his former article, (*Am. Jour. Med. Sci.*, Jan., 1852, p. 70,) in which, in addition to the cutting out and other "difficulties" requiring "great judgment, which experience alone can give, to counteract," he speaks of having witnessed "in two or three instances, a still more serious accident from an undue pressure of the clamps, viz. a strangulation of the inclosed fistulous edges, which unfortunately resulted in a sloughing of the tumefied parts, and a consequent enlarging of the opening."

The charge against his "followers," of ignorance, is an unsustained assertion, in relation to which, Bozeman and the now comparatively numerous operators are entitled to an equal footing with himself. It is well contradicted by one of his ablest and most experienced commentators (Dr. Kolloch) in the following remarks:—

"The wires *will* cut themselves out in certain cases, however much attention may be bestowed on their introduction at a sufficient distance from the edge of the raw surface, and sufficient depth into the submucous tissue; the lips included between the clamps will slough, however much judgment may be exercised in drawing them together, and irregularities on the vaginal surface, rigidity from cicatrices, and the situation of either a part or the whole of the fistulous opening, may prevent the clamps from being evenly applied, and with sufficient parallelism to secure their regular and efficient action. In consequence of these occurrences the patient has to be subjected to a greater or less number of repetitions of the operation; and, perhaps, other means have to be employed for the perfection of the cure." (Report on the History and Treatment of Vesico-Vaginal Fistula, read before the Georgia State Med. Soc., p. 17; published in the *Savannah Jour. of Med.*, and in the *Southern Med. and Surg. Jour.*, Augusta, Georgia; see also a Review by H. R. S., in *Am. Jour. Med. Sci.*, Oct., 1857, p. 392.)

The same authority, in a recent review of this pamphlet of Dr. Sims, adds some further testimony to his previous evidence in favor of the superiority of Bozeman's plan.

"The attempt of Dr. Sims to disparage 'the button' will not readily succeed in producing conviction in the minds of those who have had an opportunity of comparing the two methods. We have not the pleasure of the personal acquaintance of either Dr. S. or Dr. B., and have, therefore, no personal predilection to bias our judgment.

> "Before we were acquainted with Dr. Bozeman's Modification of the Silver Wire Suture, we had operated several times unsuccessfully with Dr. Sims's clamps; but as we knew of no more perfect method, as we were blessed with a pretty good stock of patience and perseverance, as we found that the fistulæ (although not cured) were very much contracted by each operation; above all, as we had, like Dr. Sims, willing patients at our control, we were determined to go on, yea, even to the thirtieth or fortieth repetition. Before, however, our long-suffering patients were subjected to this severe ordeal, we were furnished by Dr. Bozeman with his pamphlet, and lo! success crowned our very first trial.
>
> "With such evidence as this before our eyes, could we refuse to acknowledge the superiority of the button over the clamps?" (*Savannah Jour. of Med.*, May, 1858, p. 59.)

Dr. Mettauer, who has "treated and cured *twenty-seven* cases with the leaden interrupted suture alone, and without the least difficulty," in an instructive paper, (published June, 1855, before the appearance of Dr. Bozeman's article,) after stating that the "quilled suture, as improved by Dr. Sims, had not succeeded in his hands," holds the following language:—

> "In each case, three in number, the operation failed from ulceration of the denuded borders, both at the margins and where the metallic clamp rested on them, and by the premature cutting-out of the silver wire.
>
> "In one case the clamp induced sufficient ulceration to form a new opening into the bladder so early as the fifth day after the operation. Possibly I may have used undue force in the approximation of the denuded borders in these cases; but it seemed to me that I only carried it to the extent of placing them in complete and firm contact.
>
> "This suture, however useful it may have been in the hands of Dr. Sims, is liable to important objections. If applied with two much force it will almost certainly cause ulceration or actual sloughing of the denuded borders; and it will be very difficult, in most cases in which it is used, to determine the degree of force which should be used in applying it." (*Virginia Med. and Surg. Jour.*, June, 1855, pp. 451, 452.)

One more testimonial may be offered here, (from the review of Dr. H. R. Storer, in the *Am. Jour. Med. Sci.*, loc. citat.,) which we quote in full because it presents an excellent and appreciative summary of Dr. Bozeman's labors, and because it is free from the suspicion of undue influences to which our own remarks may be subjected.

> "It is to Dr. Bozeman, of Alabama, to whom it accidentally suggested itself, that we are indebted for the long-looked-for discovery, now known as the button suture. His first paper was published in the spring of 1856, and he has lately made known the results of a more extended experience, by diagrams, accurate descriptions, an elaborate classification of all possible varieties of fistula, and directions for perfectly adapting his apparatus to each and every one of them.
>
> "The early stages of his operation are identical with those already described.

Silver ligatures are used, but are introduced directly and without the aid of any other thread. Instead of being fastened to metal quills, the extremities of the wires, brought together like Mettauer's before twisting, are passed through minute perforations in a shield of lead, which is found to answer much better than the silver at first proposed, and, as by Sims, clamped securely with shot.

"It is claimed that the metal shield will—better than Sims's cross-bars—1. Act the part of a splint in keeping the approximated edges in close contact, and at rest; 2. Prevent the wires from cutting out; and 3. Protect the edges of the wound against irritation by the urine, vaginal discharges, or atmosphere.

"The button suture has been fairly tried. Successful cases have been reported, besides the fifteen [now twenty-four] or more of Bozeman, in this country, by Gaston, T. Wood, Kolloch, Williams, and others; and in Great Britain, by Spencer Wells and Baker Brown; all of whom corroborate its excellence. Kolloch's report, indeed, prepared evidently with care, and well and candidly written, is mainly occupied by cases from his own practice, show the relative merits of the clamp and button. Dr. Bozeman has found that the more difficult cases of ordinary fistula can be easily cured, but there are two lesions he has mastered which have hitherto been entirely beyond surgical aid.

"The first of these is a longitudinal laceration of the edge of the meatus, [termed '*rent of the urethra,*' by Dr. B.] 'the most unfavorable form of all the urethral injuries,' for which no treatment had ever been proposed.

"The other victory alluded to is in those cases where the cervix uteri is directly involved in the fistula. Nothing had been done unless by Vidal's method of closing the vagina, save by Jobert, who, until lately, by extensively dissecting away the attachments of the cervix, whether or not accompanying this by the insertion of a flap from a distant part, managed to close the fistula but lost his patients by peritonitis.

"Bozeman, on the other hand, claims better fortune. By his method the uterus itself is dragged down, the edges of the cervix are passed, just as with any part of the vesico-vaginal septum, and stiches inserted into its substance.

"The idea of this bold procedure, as novel as it is successful, had undoubtedly presented itself to the mind of Velpeau, (*Operative Surgery*, vol. i., p. 627; see also his *Clinique Chirurgicale*, vol. ii., p. 267,) who speaks of the possibility of dragging down the cervix and making it subservient to closing the fistula, but remarks, 'all these suggestions want a foundation to rest upon; none of them can yet adduce any success in their favor;' and Jobert, improving upon himself, relates, at the close of the year, a case in which sutures were passed through the cervix; (*Union Médicale*, Nov., 1856;) but the credit of having independently conceived the operation in all its completeness, and of having put it into actual practice, is undoubtedly Bozeman's."

This review also mentions a unique and invaluable application of the button, which deserves especial notice. Speaking in praise of Sims's catheter, as indispensable, he says:—

"In those lacerations of the meatus already referred to, this instrument cannot be borne; but by an ingenious arrangement of his button-shield, Bozeman has compelled it, though designed for an entirely different purpose, successfully to take the place by affording the necessary support to a male elastic."

The reader is now prepared to appreciate the wisdom and delicacy as well as justness of the attack of Dr. Sims upon the unwitting offender who had left him so far behind in the study of their common theme.

In 1853, being obliged by ill health to leave Montgomery, Alabama, Dr. S. "gave Dr. Bozeman of that place a partnership in business,* and indoctrinated him in my peculiar method of operating for vesico-vaginal fistula, instructing him in my various modes of using silver wire as a suture, not only in this class of affections, but in general surgery. Not understanding its principle of action, and, therefore, failing in its practical application, he was quite disheartened with his ill success, when by mere accident he fell upon a plan of fastening the wire, and so modifying my method, that in awkward or inexperienced hands it became easier of application. Instead of passing the wires through the leaden bars on each side of the fistula, he passed them through a concave disc or 'button' which rests upon the surface of the parts to be united."

In the marvellous history of his own discoveries he stumbles on the best mode of looking into the vagina, by a "Providential incident;" and announces (p. 51) that "THERE ARE NO ACCIDENTS IN THE PROVIDENCE OF GOD." It seems, however, that the device of Dr. Bozeman is not to be thus canonized, although it had neither precedent nor incident to bring it into active being. By mere accident only did he fall upon a plan, which could not be respectable because it so modified his master's method as to make this "easier of application," and thus bring it within the unhallowed reach of "awkward and inexperienced hands!"

The balloon experiment of the kneeling patient, so graphically recorded, (p. 50,) in which the whole vaginal expanse displayed itself for the first time to the admiring eyes of Dr. Sims, was one which, although not thus explained, was well known to surgeons of any reading, long before it thus occurred to the practical mind of our historian. The position on the elbows and knees suggested by it was years ago recommended by Wurtzer, Chelius, Velpeau, and Churchill, and is quoted by Pancoast in his *Operative Surgery*, published in 1844. Like the unlucky clamp, however, this other once prominent feature in the process of the Doctor is withdrawn from its place of honor by the immortal stitch. A position, partly prone and partly on the side, much less constrained for the patient, and, as we believe, from one trial of it, sufficiently convenient for the operator, is now recommended. It is illustrated with a full-length picture which is not equal to many of the others, either in design or execution.

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* [The partnership referred to, we understand from Dr. B., was only nominal, and was formed, at the earnest solicitation of Dr. Sims, for a special purpose and consideration, just as he was making his arrangements to come to the North, and not longer than two months before his departure.—EDS.]

Our orator claims to have "had a mission, if not of a Divine character, at least but little short of it,—of Divine origin;" and to be engaged in "a labor of love under Divine guidance for the furtherance of a truly benevolent purpose." In a season of discouragement, too, something told him "that the work had to be done, and that if I should fall, God in his wisdom would raise up some one as an instrument to carry it forward to a glorious consummation."—pp. 54, 55.

Better times have not increased his Christian humility or charity. He evidently wishes to remain alone in his solemn glory, and will brook no son of Jesse near the throne.

> "Notwithstanding the fact that the Doctor lived in Montgomery for years, without any professional position till I gave it to him, that he is indebted to me for what he could never have obtained without my aid,* he appropriates to himself every step of the operation that resulted from my own individual and unaided efforts,—even my silver wire and perforated shot, the only things of any real value whatever, and publishes it as his operation by a 'new mode of suture,' making strenuous efforts to place my labors in the background.
>
> "I do not complain of modifications, but I do complain of a disingenuousness that would be dishonorable even under widely different circumstances."

The pathetic earnestness with which, like the Israelite of Venice, he thus bewails his daughter and his ducats, would only rouse a smile, if the outcry were not burdened with a serious personal charge.

In order to contradict this charge at once, we have only to cite a passage from Dr. Bozeman's first paper. In objecting to the clamp suture he expressly states that,—

> "I do not wish to be understood as attempting to detract from the great credit due, from the profession and the public, to Dr. Sims for his untiring perseverance in bringing his method to its present high state of perfection; I consider that this gentleman is fully entitled to all the praise that has been bestowed upon him, both in America and Europe. To the honor of his professional brethren in this country, it may be stated that no one has been found who has not gladly accorded to him the high distinction that he at present occupies. I am sorry that the same cannot be said of European surgeons in general; for, with the exception of Mr. Erichsen, Mr. Brown and Mr. Druitt, of London, no one on the other side of the Atlantic has proved sufficiently frank to do full justice to Dr. Sims's claims. Fully impressed, therefore, with the importance of the position I assume in attempting to show that the clamp suture is objec-

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* [Dr. Bozeman had the prospects of any other young practitioner of his age and acquirements. The only professional position granted, that we have heard of, was the dwelling-house and office of Dr. Sims, for which the latter received what was considered, at the time, an extravagantly high price.—EDS.]

tionable, I proceed to the task, actuated, as every inquirer after truth should be, by no other motives than a desire to make facts and principles subservient to the great ends of science."

Dr. Bozeman does not claim originality, as he might well have done, for his button, but offers it only as a modification of the twisted suture. In our view it is altogether unlike and superior to the twisted suture, being capable of greater variation and serving more completely as splint, shield and director, all in one. The only thing that approaches it is the *brad suture;* but that is only a convenient species of quill or clamp suture, with few of the mechanical advantages of the various forms of button. As for the outcry about the non-acknowledgment of "even the silver and the shot," it is sheer nonsense to suppose that Dr. Bozeman was bound to say, in so many definite words, what had long been a matter of notoriety among professional men. His general tribute to Dr. Sims's pre-emption rights was ample, and, of course, included all matters not expressly mentioned. But Dr. Bozeman can easily do without the shot as well as the silver; for he only needs a furrowed ridge upon the outer face of the shield along the line through which the holes are to pass, to secure a fixed and ready means of clinching the wire, which is better than the "clumsy" and slippery contrivance of Dr. Sims.

Dr. Sims, in narrating a hare-lip case, describes an arrangement of softened ivory, or a softened and flattened piece of quill, to be applied as a shield and a support under the wires, which is clearly suggested by Bozeman's disc; which indeed had actually been proposed as such, in private practice, by two different surgeons of our acquaintance. Although engaged at the time in exalting the silver suture at the expense of the shield, he thus impliedly admits the advantage of the latter, but utters not a word as to the source of his suggestion.

This very attempt, perhaps unconscious, on the part of Dr. Sims, to avail himself of the principle of mechanical support and retention to which the broad disc is so well adapted, shows the necessity, which he perceives, for something more than the barren and negative quality of non-irritation, which alone distinguishes the metallic suture from other sutures, as a bond of union. Beyond the absence of superficial irritation, its ordinary use involves no "principle" whatever that is not common to silk and flax, and that is not surpassed in rational attributes by other modes of retentive dressing.

On the other hand, the button shield, as already shown in part by Dr. Storer, is really philosophical, and is capable of application to an abundant variety of solutions of continuity. This very capability would lead an intelligent and earnest practitioner to classify the forms of injury to which it may be adapted. That this has been done in fistulæ with great care and clearness by Dr. Bozeman, is much to his honor, since he has thus effected more scientific progress than with any other portion of his labors.

In the course of his investigations he has ascertained the relative frequency of certain fistulæ, and has learned that the most prevalent (about thirty per cent.) are those involving the neck of the uterus, his fifth class, and one in which the clamp is altogether unavailable.

It was not our expectation, however, to consider Dr. Bozeman's plans and principles of treatment. They are fully given in his several papers, especially the last, already published in this journal. Our sole desire has been to expose the folly and injustice of the attack upon his honor as a man and a physician, by the one who should have cherished him the most, not as a rival but as a worthy coadjutor. Nor need we follow the aggressor in his feeble and inconsistent strictures on the "principle" of the button suture, and in his misconstruction of its application; still less in his ill-judged and inconclusive trials of it, as exhibited in his discourse.

Of the six cases subjected to the pretended test and found wanting, three were cases of operation for occlusion of the vagina, in which the button is not recommended, and in which a different operation should have been performed; while not one of the operations in the other three was performed in accordance with the precepts of the inventor.

Before parting with Dr. Sims we would humbly ask his leave, and, if need be, that of Drs. Bozeman and Mettauer, to propose another "modification." From what we have seen of leaden ligatures, and of these vesico-vaginal operations, we are strongly prepossessed in favor of Mettauer's suture. Dr. M. thus describes his method of using this, after having introduced the several threads, directly opposite each other, through all the coats of the bladder and vagina, "fully an inch from the denuded margins on the vaginal surface":—

> "I next proceeded to approximate the divided borders, by making traction on the metallic threads, and then carefully confining them in close and exact contact, by twisting their free ends together, until the loops were sufficiently abridged to enable them both to support and moderately to compress the structures embraced by them; and for the purpose of twisting the wires I employed a light pair of self-closing forceps, without ring-handles, having found that instrument far more handy than the ordinary dressing forceps, or forceps with ring-handles. After securing the first suture so as to bring the denuded borders well together, I tightened the second, and was gratified in finding that the fistulous opening was perfectly closed, and that not a drop of urine escaped between the borders. I was careful, in twisting the wires, not to employ undue force, but sufficient to bring the opposing surfaces into complete and firm contact, without injuriously compressing the unlooped structure; and I invariably twisted from left to right, to prevent confusion.

"After many trials in determining the extent to which the tension should be carried, I finally adopted, as a safe rule, the fixed and erected state of the twisted extremities of the wires, and their bristle-like spring when touched with the probe; and the tightening of the loops should be executed with extreme caution and gradually, testing it, as we proceed, from time to time, by touching the wires with a probe or the extremity of the forceps."—(*Virginia Med. and Surg. Journal*, June, 1855, p. 449.)

According to his experience, it is necessary to tighten the ligatures on the second or third day after the operation; which can be most readily done by simply twisting the wire a few turns, until the approximating force is once more steadily exerted, as shown by the spring-like tension of the twisted wires above described. The ability thus to graduate the approximating force, and subsequently to renew this approximation, if necessary, constitutes, in Dr. Mettauer's view, a very weighty source, among others, of superiority in the interrupted leaden suture over the clamp. The leaden suture has this advantage, to some extent, over the simple interrupted silver suture also, because of its greater pliability; but the twisting manœuvre is very easily adapted to the shield of Bozeman, and renders this latter especially desirable for the purpose. All that we need is a double row of holes parallel to each other, instead of a single one as heretofore. Passing the two ends of each ligature through their corresponding pair of holes, we would then twist their ends together gradually and cautiously, as directed by Mettauer, and we would repeat this twisting, or release the wires by untwisting, according to circumstances in each case.

In order the better to watch the condition and relative positions of the sutured parts, we would prefer a transparent horn or tortoise-shell shield to the lead at present used. This transparent shield, with parallel lines of perforations, and a series of slender leaden or iron or tin wires properly applied, and to be twisted, retwisted or untwisted, *pro re nata*, might be made to answer every indication in hare-lip and other plastic operations; at least, as well as the flattened quill and silver suture plan proposed by Dr. Sims. We again beg permission to submit our *horn-button and lead, iron or tin suture,* for his especial and candid consideration.

The contrast between the combination of vile things in our "invention" and the *simplex mundiciis* of their lordly rival is, doubtless, painful to eyes and ears polite; but, until we are convinced that silver is entitled to monopolize the position as a connecting medium in wounds which it holds as a circulating one in trade, we must continue to adhere to the more serviceable iron and lead, or, peradventure, TIN.

In conclusion, we again regret that the New York Academy of Medicine has permitted this publication to go forth under the sanction of its seal and the formal action of a committee composed of some of its best men. It was bad enough, in all conscience, to oblige these gentlemen and their fellows to listen even to its delivery, not omitting the exordium to the "presidential galaxy" with which the orator apologizes for the intrusion of his private griefs. But to involve any public body, through an annual address, in the endorsement of such a tissue of adulation and self-glorification, is an imposition on its character for taste, judgment, dignity, and ethics, which ought not to go unwhipped of justice,—least of all by a society which ranks among its members many of the brightest ornaments of the American profession.

In regard to the author himself, we are satisfied that, whatever he may think of our own remarks—which have been indited in no recriminating spirit, as we have no personal interest in either party—he must deeply lament the occasion which has thus brought him so unpleasantly before his brethren and the public. Our task has been a thankless one, as unpalatable to ourselves as it may be to him; and we heartily wish that he and his reviewers could have been spared the necessity of its infliction. To our readers we have to say, in excuse for troubling them, that in the performance of the censor's duty we have striven to respect the adage,—"If offence come out of truth, it were better that the offence come than that the truth be concealed."

ART. V.—*Lectures on the Principles and Practice of Physic.* Delivered at King's College, London. By THOMAS WATSON, M.D., Fellow of the Royal College of Physicians; late Physician to the Middlesex Hospital, etc. Two volumes, 8vo., pp. 1856. Fourth edition, revised. London: John W. Parker & Son. 1858.

IN announcing a fourth edition of Dr. Watson's work we are performing one of those pleasant duties sometimes connected with literary notices. We are welcoming back an old and revered friend, whose imperative obligations have kept him from us for a few years, but who comes back with his wisdom extended, his liveliness and genial kindness the same, to charm us and enlighten us as of old.

Dr. Watson's lectures, which common consent has made the text-book of the profession in this country as well as in England, have been for several years out of print. The unceasing toil of busy professional life had deprived him of the leisure necessary for their revision, and we have to thank him that he has taken his moments of rest, not only to re-edit, but also to extend them, and to incorporate whatever recent investigations have added to the science.

Of new matter we notice especially an alteration in the lectures on hypertrophy and on transformation of tissue, conformably with the results obtained by Mr. Paget; remarks on fatty degeneration of the heart, rendering a good account of Dr. Quain's researches; references to the views of Brown-Séquard concerning the spinal cord; to those of Kirkes, in connection with obstruction of the arteries by vegetations washed into them; to the labors of Garrod on the chemistry of scurvy and gout; of Frerich's and others concerning Bright's disease; and many additions on cardiac and abdominal affections.

In the first volume there is a very interesting statement regarding the application of anæsthetics. Dr. Watson, without wishing to detract from "the triumph and glory" of the discovery, gives us some singular information, which proves how closely a great discovery may be approached, and yet missed. A patient of his told him this story of herself:—

> "She had been sorely tried, in her early years, with paroxysms of urgent dyspnœa, frequently occurring; and her life was thought to be in danger. After fruitless trials of various other remedies, the following method was adopted, with the happiest results, under the advice of a physician of high promise, who died young, the late Dr. Woolcombe, of Plymouth.
>
> "About two teaspoonfuls of sulphuric æther were poured into a saucer, which was placed on her lap, and over which she breathed, as she sat gasping in bed, with a shawl thrown over her head to prevent the escape of the vapor. Very soon a delightful sensation of tranquillity ensued; she felt (I quote her own words) 'as if going to heaven in the most heavenly way,' and presently she sank back unconscious. As soon as this happened, her husband, by whom the process was managed, withdrew the shawl, and in a short time Lady Martin gradually recovered, breathing calmly. This mode of quieting her attacks of asthma was begun in 1806, a few years after the publication of Sir Humphrey Davy's hint; and it was repeated again and again, sometimes twice in the same day, for a very considerable period."

The note appended to this case is very curious. Dr. Watson tells us that the practice of benumbing the sensibility of a patient about to undergo a surgical operation, by means of inhaling vapors, may be traced back to the twelfth century, as was ascertained from the pages of an Italian work in the British Museum. One Hugo da Lucca bequeathed to his son the secret of making several chemical preparations, which the latter, who finally became Bishop of Cervia, published. Among them was a most potent caustic and a soporific, which, by being inhaled, possessed the power of putting the patient to sleep before undergoing a painful operation, ("*ed un soporifero che per mezzo del solo odorato assopiva i malati, in occasione di operazioni dolorose, che dovessero soffire.*") That the remedy prepared from the juice of various anodynes was simply used by inhalation, is undoubted; the formula for its preparation proves it.*

At the end of the lecture on blood-letting is another note which will attract much attention. It is an answer to the arguments of Dr. Bennett against the use of blood-letting and antiphlogistics; an answer the fairness of which is only equalled by its courtesy and the language in which it is clothed. Dr. Bennett takes the ground that antiphlogistics are not necessary, and that their relative abandonment, especially that of blood-letting, is due to the advance of our knowledge of pathology and diagnosis. Dr. Watson testifies, from the experience in his own person, to the efficacy of bleeding and to its power of cutting short disease. He is persuaded that we bleed less because diseases have changed their type, and that the argument against venæsection, that it deteriorates the blood, is not a good one, since in inflammation there is reason to believe that the inflamed part spreads infection through the blood; this we prevent if we can arrest the inflammation. Statistics ought not to be permitted to determine our practice:

> "To use or to withhold a given remedy simply because it is found, by numerical calculation, that in cases nominally the same recoveries have been more frequent when that remedy was employed on the one hand, or omitted on the other, would be to sacrifice the plain and perhaps pressing indications of a particular case to the statistical averages of diseases having merely a common denomination."

In the chapter on mercurial poisoning, Dr. Watson mentions the view of M. Melsens as to the actual union of the metallic substance with the affected part. The trembling occasioned by the mercury is best removed by small doses of strychnia, by iron and by quinia; while the poison may be expelled by preparations of iodine. In iron he places most faith.

The lectures on fever show, however, most change. Dr. Watson frankly avows that he no longer thinks that a definite distinction between the forms of continued fever does not exist. "The Dr. Jenner of our time, with patience and sagacity worthy of the great name he bears," has proved to the English profession that the typhus and typhoid fever are not the same; and this view Dr. Watson adopts. He remarks, that Dr. Bartlett, in 1842, had testified to the same distinction in the fevers of the United

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* "Haec omnia in unum commisce in vase æneo: ac deinde in istud mitte spongiam novam, quod totum ebulliat: et tamdiu ad solem canicularibus diebus donec omnia consumat: et decoquatur in ea: quoties autem opus erit, mittas ipsam spongiam in aquam calidam per unam horam: et naribus apponatur; quousque somnum capiat: qui incidendus est: et sic fiat chirurgia: qua peracta, ut excitetur: aliam spongiam in aceto infusam, frequenter ad nares ponas."

States. He might have added, that before the year 1837, Dr. Gerhard had proved by accurate observation the identity of our typhoid fever with that described by Louis, and had drawn the difference between it and typhus.

Addison's disease also receives its full share of consideration, and a case is added which came under Dr. Watson's care. The patient had a tanned appearance, his hands were bronzy, with pink-contrasting finger nails. The course of the disease was marked by fluctuations: he regained at one time flesh and strength, and the bronzed hue varied in depth, but he finally sank under an acute laryngeal affection. The supra-renal capsules were found to be enlarged and infiltrated with crude and suppurating tubercular matter.

The lectures on other abdominal diseases have also been somewhat extended.

All the additions in these volumes are in the same masterly style, and show the same clear erudition and high reasoning powers with which we are familiar from former editions. In his introductory chapter Dr. Watson paraphrases a passage from Bacon:—"The lecturer must not be the ant, collecting all things indiscriminately from all quarters; nor the spider, seeking no materials abroad, but spinning his web of speculative doctrine from within himself; but rather the bee, extracting crude honey from various flowers, storing it up in the recesses of his brain, and submitting it to the operation of his internal faculties until it be matured and ready for use." Could any one be found who might serve better as the original of this sketch of a model lecturer than Dr. Watson himself? If he had been sitting for his portrait, could it have been more fitly and accurately drawn? Yet there is one point needed to make it complete,—it is to add that the lecturer's skill, his wisdom, his learning, are equalled by the ease of his graceful diction, his eloquence, and the far higher qualities of candor, of courtesy, of modesty, and of generous appreciation of merit in others. May he long remain to instruct us, and to enjoy in the glorious sunset of his declining years the honors, the confidence and love gained during his useful life!

ART. V.—*Contributions to Operative Surgery and Surgical Pathology.* By J. M. CARNOCHAN, M.D., Professor of Surgery in the New York Medical College, Surgeon-in-chief to the State Emigrant's Hospital, etc. With illustrations drawn from nature. Philadelphia: Lindsay & Blakiston, 1858, 4to. pp. 32.

THE present number of this work, the first of a series of twelve, comprises an account of amputation of the entire lower jaw, with general remarks on this operation, and several cases of elephantiasis Arabum of the inferior extremity, treated by ligature of the femoral artery. The articles are illustrated by excellent lithographic drawings, and are treated with circumstantial minuteness, having been previously published in the New York Journal of Medicine. The mechanical execution is altogether superior, and reflects great credit upon the publishers, Messrs. Lindsay and Blakiston. The work, when complete, will form a beautiful volume of at least five hundred pages, and be the most valuable original contribution to the art and science of surgery that has yet been made by an American surgeon.

To enable the reader to obtain a correct idea of the various topics that will be discussed in the succeeding numbers, we subjoin the table of contents of each:—

"No. 2. Case of exsection of the entire ulna. Remarks on neuralgia, with three cases successfully treated by exsection of the second branch of the fifth pair of nerves, beyond the ganglion of Meckel.

"No. 3. Case of restoration of the entire upper lip. Remarks on the pathology of congenital dislocations of the hip-joint, with illustrations.

"No. 4. Case of exsection of the entire radius. Case of exsection of the three lower fourths of the same bone. Remarks on osteo-aneurism, with a case.

"No. 5. Case of amputation at the shoulder-joint for the removal of a large osteo-fibro-cancerous tumor of the humerus, with remarks on amputation at this joint. Case of penetrating gun-shot wound of the heart.

"No. 6. Case of double congenital dislocation of the hip-joint. Remarks on double capital operations, with cases. Remarks on the comparative merits of the partial amputations of the foot. Remarks on amputations through the ankle-joint.

"No. 7. Successful removal of a large fibro-cartilaginous tumor, growing from the sixth and seventh ribs, over the region of the heart. Remarks on the treatment of varicose veins of the lower extremities, with cases. Remarks on the creation of an artificial joint upon the lower jaw, in a case of complete anchylosis at the temporo-maxillary articulation of one side.

"No. 8. Remarks on the operation of double complicated hare-lip, with cases. Remarks on the etiology of congenital dislocations of the hip-joint. Remarks on the removal of the first dressings after capital amputations.

"No. 9. Case of encysted sanguineous tumor of the neck successfully removed, with remarks on such formations. Remarks on the purulent ophthalmia of large and crowded institutions. Case of vesico-vaginal fistula and stricture of the vagina, with formation of two large urinary calculi in the vagina, behind the stricture; spontaneous cure of the fistula.

"No. 10. Two cases of amputation at the hip-joint. Remarks on the anatomy of femoral hernia. Case of epilepsy treated by tracheotomy, and wearing of a tracheal tube, with remarks. Remarks on the restoration of the entire lower lip, with cases. Cases of amaurosis treated with the Pommade de Gondret on the sinciput."

Dr. Carnochan has enjoyed rare opportunities of observing surgical diseases at the Emigrant's Hospital, of which he has now been chief surgeon for upwards of eight years, and his ability as a brilliant and original operator is well known to the profession of this country and of Europe. We bespeak for the work an attentive perusal.

Original Communications.

ART. I.—*Practical Observations on the Nature and Treatment of Tuberculosis of the Hip-joint, commonly called Coxalgia.* By S. D. GROSS, M.D., Professor of Surgery in the Jefferson Medical College of Philadelphia.

FROM the earliest ages of medicine, hip-joint disease has been an object of the deepest interest with the practitioner. Its literature, scattered through an immense number of monographs, cyclopædias, and periodicals, is exceedingly rich, and fully attests the truth of this remark; and yet, notwithstanding this, it is lamentable to think how imperfectly it is still understood by the mass of the profession; how little is known about its nature and etiology; and how much remains to be done to place it upon a proper scientific basis.

The term coxalgia, by which this disease is usually described, should be discarded from surgical nomenclature, as wholly inexpressive of its true character. Literally signifying pain, or neuralgia suffering, it is neither denotive of its pathology, nor, indeed, even always of its seat; for, as will hereafter be seen, the pain is nearly as often situated in other parts as in the hip-joint itself. The words hip-disease, hip-joint disease, and coxarthrocace are not less indefinite, and should therefore be equally proscribed. The only appropriate name is strumous, tubercular, or scrofulous, the import of which is well understood, and which could not possibly more clearly and satisfactorily express the true nature of the complaint. I make these remarks because the nomenclature of a disease is frequently of great importance in regard to the proper appreciation of its pathology.

Strumous disease of the hip-joint occurs at different periods of life; but the age at which it usually shows itself is early childhood. As far as my experience goes, and I do not hesitate to say that it is very large, I am satisfied that it is by far most common from the third to the eleventh year. Cases of it are occasionally witnessed as early as the eighteenth month, and a good many just before the time of puberty. After the twentieth year the malady is uncommon; and, if an instance is sometimes met with in middle life, it is to be regarded as an exception to what must be considered as the great law which presides over the development of this form of strumous disease. Tuberculosis of the lungs is most common between the ages of twenty and forty; of the lymphatic ganglions, the spleen, eye, and arachnoid membrane, between the ages of three and ten. Every organ in which the malady occurs has, it may be presumed, its peculiar laws of evolution, growth, maturation, and disintegration of the deposit from which the affection derives its distinctive features. That this is true of the hip-joint, as it is of other parts of the body, all experience attests. I recollect only one case of tuberculosis of this articulation after the thirtieth year.

The malady is met with in both sexes, but in what proportion has not been determined, as no statistics, illustrative of the subject, have been published. My observation has furnished me with a much larger number of cases in the male than the female; but this may have been a mere coincidence, and the question, after all, is one of no practical value, whatever may be the fact with reference to it.

Tuberculosis of the hip-joint is occasionally observed in several members of the same family. The instances of this, however, are rare, and I have not seen more than three in my own practice and in that of my medical friends. If it is ever congenital I have not witnessed an example of it; nor have I ever known it to be hereditary, although many of my cases have occurred in the offspring of strumous parents, or in families in which tuberculosis had manifested itself in some form or other. In this respect it bears, as will appear by and by, the same relation to the structures of the hip-joint that phthisis bears to those of the lungs.

I.—ETIOLOGY.

The exciting causes of this affection have been a prolific source of speculation, of dispute, and even of angry discussion; and, still, the most that can, with truth, be said of them is, that they are, in general, exceedingly obscure. In the great majority of cases, it arises spontaneously, defying all conjecture in respect to its origin. The surgeon, it is true, is often told that the little patient received a fall, blow, or kick upon the affected parts, or that the joint was sprained, bruised, or twisted, several months, perhaps, before the appearance of the characteristic symptoms; but my experience is that such information is usually little reliable, or that, if the occurrence did take place as stated, it excited but little if any influence in developing the malady. Unless very severe, such accidents would no more occasion tuberculosis of the hip-joint than a similar injury of the chest would produce tuberculosis of the lungs, or of the head tuberculosis of the arachnoid membrane. The possibility of such an occurrence cannot, of course, be denied, but it may be safely affirmed that it is infrequent, and therefore exceptional.

Exposure to cold, intense or protracted, is usually enumerated as another exciting cause of the malady, and generally with a better show of reason. That it may, in such an event, conduce to this result, especially in a child of feeble constitution, ill-fed, and with an impoverished state of the blood, hardly admits of doubt. It is well known that cold is one of the most common and powerful causes of pulmonary consumption and of strumous disease of the neck. Living in damp, under-ground, and ill-ventilated apartments operates in the same manner. Simple suppression of the cutaneous perspiration, suddenly induced, as when a person is exposed to a heavy current of air, might, it may be presumed, easily occasion the affection in one predisposed to its occurrence.

The use of unwholesome food, derangement of the digestive organs, imperfect assimilation, or inadequate nutrition, however induced, are also among the causes of this disease, as they are among the causes of tuberculosis in general. Protracted courses of mercury, establishing a severe drain upon the system, followed by the abstraction of the plastic elements of the blood, may lead to similar results. The same is true, though the circumstance does not always readily admit of proof, of the exhaustion consequent upon copious and protracted hemorrhages, infantile cholera, chronic diarrhœa, scarlatina, measles, smallpox, and of typhoid, intermittent, and other fevers; in short, of everything that has a tendency to enfeeble the system and degrade the blood.

It has been asserted by writers on coxalgia that rheumatism is a common cause of this disease, but I have never seen an instance corroborative of the truth of the statement. The fact is, it is not at all probable that that affection ever exerts such an influence; for, in the first place, it is well known that tuberculosis is exceedingly rare in rheumatic subjects, and, in the second, that, when disease of the hip-joint shows itself in persons of this description, it is very different from the strumous disorder under consideration.

Persons of fair complexion, light hair and eyes, a delicate skin, and a languid circulation, with a tendency to eruptions of the scalp and enlargement of the lymphatic ganglions, are most prone to tuberculosis of the hip-joint. In many cases the strumous diathesis exists in a most marked degree, the tumid lip and belly, the long eyelashes, the cold extremities, the flattened shape of the fingers, and the disordered condition of the digestive apparatus, affording unmistakable evidence of its presence. The intellectual faculties vary in this as in other forms of strumous disease. Occasionally the little patient is dull and obtuse, with little disposition to exertion; but for the most part he is remarkably precocious and active, both in mind and body, inclined to exercise and amusement even long after the malady has been fully established. No one who has frequently met with this affection can have failed to notice the different temperaments of those who are most liable to suffer from it. These are the sanguine and the lymphatic, or a combination of these. In the former the characteristics are, a rosy state of the countenance, a well-developed muscular system, with a tendency frequently to a certain degree of embonpoint, an active circulation of the skin, warmth of the extremities, and an active state of the intellect. Opposed to this, in every particular, is the lymphatic temperament. The face is pale, often swollen and pasty, the muscles are soft and flabby, the feet are cold, the cutaneous circulation is feeble, the mind is sluggish, and the pupil is dilated. In both, particularly in the latter, the belly and upper lip are often remarkably tumid, and most expressive of the tubercular diathesis. These two varieties of temperament, with their various modifications, deserve careful consideration, as they form the basis of important therapeutic indications.

It is rare that both hip-joints are involved in this affection, either simultaneously or consecutively. I do not now recollect an instance of the kind within the sphere of my observation. During its progress it becomes occasionally complicated with tuberculosis of the spine, as Pott's disease and psoas abscess, ophthalmitis, mesenteric disease, strumous enlargement of the lymphatic ganglions of the neck, and pulmonary phthisis. It is not impossible that some of these affections may occasionally precede the malady of the joint; but, however this may be, they rarely fail, when present, to aggravate it, and to hasten the fatal issue. In proof of the truth of this fact several cases will hereafter be cited from my own practice.

II.—SYMPTOMATOLOGY.

Tuberculosis of the hip-joint may be described as consisting of three stages, each characterized by distinctive symptoms and pathological changes, as well as requiring peculiar treatment. As this division is not imaginary but real, it is deserving of the greatest attention.

The symptoms by which the disease is usually announced are of so obscure and stealthy a character as to render it very liable to be mistaken for other affections of the joint. The first circumstance which commonly attracts attention, especially if the patient be a child, is a feeling of fatigue after exercise, with slight pain in the knee, and a disposition to drag the limb, thus giving the gait a stiff, awkward appearance. In this manner the case may progress for several weeks, or, indeed, even for several months, with, perhaps, hardly any perceptible aggravation. The child still goes about, taking his accustomed exercise, and manifesting the same interest as formerly in his out-door amusements. Gradually, however, the pain increases; there is now a distinct limping, and the sleep at night is apt to be disturbed by spasmodic twitches of the extremity. The pain is usually referred to the knee, particularly to its inner side, and is either sharp and lancinating, or dull, heavy, and aching. It is sometimes felt in the very depth of the joint, but more frequently it is superficial, as it were just beneath the integuments. Exercise, or motion of any kind, always increases it, and it is generally worse at night than in the day; damp states of the atmosphere, suppression of the cutaneous perspiration, and disorder of the digestive organs also frequently aggravate it. The knee, on inspection, is found to be free from swelling and discoloration, and commonly quite tolerant of rough manipulation, as motion, pressure, and percussion. Occasionally the pain is of a neuralgic nature, and distinctly periodical in its occurrence, very similar, in this respect, to the paroxysms of an intermittent fever; the attack, perhaps, coming on early in the evening, and, after having continued for a few hours, returning about the same time the next day. This form of pain is most frequent, as far as my observation enables me to judge, in persons living in a malarial atmosphere.

It is not often, however, that the pain, whatever be its character, is confined entirely, at this stage of the disease, to the knee; or, if it be so at first, that it remains there exclusively for any length of time. In general it extends also to the thigh and leg, sometimes along the front, now along the sides, especially the inner, and now along the posterior surface, in the direction, apparently, of some nervous trunk, as the crural, obturator, saphenous, or sacro-sciatic. I have known cases where the pain was felt most keenly at the tendo-achillis, just above the ankle-joint, and in one instance, under my charge not long ago, it was distressingly severe over the instep. Sometimes, again, the pain seems to shift from one of these points to another, being most severe, perhaps, at one time in the knee, and at another in the thigh, leg, or foot. It is proper also to add that the pain is generally not persistent, and that the patient has frequently long intervals of ease or of comparative comfort.

Various explanations have been offered respecting the occurrence of pain at the knee, but I cannot say that any of them, so far as it is in my power to appreciate them, afford any satisfactory solution. It has been supposed, for example, that it is owing to an inflamed condition of some of the principal nerves of the limb, especially the obturator, which, as is well known, occasionally sends a small filament to the hip-joint; but what connection has this nerve with the knee? None whatever; and the same is true of the other nerves of the lower extremity. Nor, in my judgment, is the opinion that it is owing to disease of the long head of the femoral muscle any more plausible. This muscle lies over, and is attached to, the capsular ligament of the hip-joint; but even supposing, what is not very probable at this early stage of the malady, that it participates in the morbid action, how could it give rise to the pain in the knee, the leg, and foot? Again, it has been imagined that the suffering in question is caused by inflammation of the cancellated structure of the head and neck of the thigh-bone; but if this be so, we have no positive proof of the fact. Our knowledge, then, in regard to this matter, is wholly conjectural, nothing more; a circumstance so much the less to be regretted, because it is really not of the least practical importance how the pain is produced, provided it is recollected that it usually manifests itself first at the knee. So far as this is concerned it is a symptom of great diagnostic value.

After some time, varying from a few weeks to as many months, the pain shifts to the hip and its neighborhood; or, if it do not entirely forsake the knee, it is generally less constant and severe there than it was in the first instance, or soon after the commencement of the morbid action. Commonly it is most intense and persistent directly over the articulation, deep-seated, and of a dull, gnawing character. At times it is perceived most keenly in the sacro-sciatic notch, between the great trochanter and the spine of the ilium, or in the upper and outer part of the groin. Occasionally, again, it exists simultaneously at all these points, although not in an equal degree; or, as it leaves one, it fastens itself upon another. In rare cases the pain appears in the hip before it shows itself in the knee, thigh, or leg. Pressure upon the gluteal region, motion of the affected joint, and percussion of the knee, the leg being flexed at a right angle, or of the sole of the foot, the limb being extended, always augments the pain, and leads to the detection of its seat.

As yet, there is no sensible impairment of the general health; the appetite is good, and the various tissues retain their normal development. The muscles of the affected hip and limb are, perhaps, a little thinner and softer than natural, but these changes are usually slight, and hence they often elude detection.

The symptoms now described may be regarded as, at least in some degree, characteristic of the first stage of hip-joint disease. Another train now succeeds, denotive of the steady advance of the morbid action, and equally significant of its presence.

The most prominent local phenomena, at this period, are, an increase of the pain in the hip and knee, flattening of the buttock, effacement of the gluteo-femoral crease, and apparent elongation of the limb, with spasmodic twitching and wasting of its muscles.

The pain, hitherto seated chiefly in the knee, now also affects the hip, or, if it existed there previously, as, indeed, is not unfrequently the case, it becomes sensibly aggravated. It is particularly violent at night, often for hours interrupting sleep, and attended with the most distressing spasmodic twitches of the muscles of the limb, which thus greatly augment the local and general suffering. The pain at one time is fixed, deep, aching, gnawing, or boring in its character; at another, erratic, sharp, or lancinating, darting about in different directions—now through the joint, then down the limb, and then through the groin, or back along the course of the sciatic nerve. Occasionally it is most severe in the lumbar region, in the lower part of the pelvis, in the situation of the acetabulum, or at the upper and inner part of the thigh. As before remarked, it is sometimes of a neuralgic character—coming, going, and recurring at particular periods. Derangement of the digestive apparatus, exposure to cold, and damp states of the atmosphere, have a tendency to aggravate and protract it. The pain in the knee, instead of disappearing, generally increases in violence, at the same time that it becomes more frequent and fixed.

The sleep is habitually disturbed by unpleasant dreams, and the patient often wakes up in great alarm, crying and screaming, being perhaps much bewildered, and unable to determine where he is or what is the matter with him. Occasionally he is partially delirious, and some minutes elapse before he regains his entire consciousness. He sleeps by snatches, and hence he usually feels fatigued and unrefreshed in the morning. Spasmodic twitching, jerking, or starting of the limb is a prominent symptom in this stage of the disease, and is rarely absent in any case Sometimes, indeed, it sets in at a very early period, and continues with more or less violence during the whole progress of the malady. It is particularly distressing in the muscles of the thigh, but often affects those also of the hip and leg.

Along with these symptoms are frequently, but by no means constantly, impairment of the appetite, and disorder of the secretions, with a certain amount of fever at night. The bowels are usually inclined to be constipated, the urine is scanty and high-colored, the skin is rather arid, especially in the forepart of the night, and the patient is disposed to drink more than common. As the case progresses the fever becomes more frequent and severe, and is often followed by pretty copious sweats. The patient loses flesh and strength, he is peevish and irritable, and his countenance has a care-worn appearance. Although such is ordinarily the state of the system, in the second stage, especially after the disease has made some progress, yet there are cases in which there is hardly any constitutional disturbance whatever, except what results from the loss of sleep.

The local phenomena at this stage of the malady are unmistakable. The buttock of the affected side is found to be remarkably flattened, so as to be in striking contrast with the sound one. It is much broader, as well as considerably larger than in the natural state; the gluteal muscles are soft and flabby, and the skin is preternaturally loose, apparently from the absorption of the subcutaneous adipose substance. The gluteo-femoral crease, which forms so prominent a feature of this part of the body in the natural state, is completely effaced, giving the thigh and hip an appearance of continuity, or as if they were fused together. The muscles of the thigh and leg are also wasted, and this circumstance, together with the loss of fatty matter, imparts to the whole limb an aspect of attenuation, which, however, upon accurate admeasurement is usually found to be much less than was at first supposed. The cause of this condition of the muscles is evidently twofold: want of exercise and perverted nervous action, leading to atrophy of their substance, as well as to the absorption of the subcutaneous and intermuscular fat. It certainly cannot be explained on the assumption of mere inactivity of the muscles, because an effect so conspicuous as this is never known to follow the want of exercise in a sound condition of the muscular fibre. Unfounded, however, as this explanation is, it is the one usually adopted by surgical writers.

Another remarkable circumstance noticeable in this stage of the disease is an elongated state of the limb, connected with the affected joint. So constant is this occurrence that it may, along with several of the other symptoms above described, be considered as pathognomonic. The extent of the elongation is indefinite, though, in general, it may be said to vary from half an inch to an inch and a half. In rare cases it may amount to two inches and even two inches and a half. It is observed both in the erect and in the recumbent posture, but is commonly more conspicuous in the former than in the latter. Various explanations have been offered of this phenomenon, all, at first sight, more or less plausible. In the first place, it has been argued that it is owing to the presence of an unusual quantity of synovial fluid, the product of inflammatory action, by which the head of the thigh-bone is partially pressed out of its socket and the corresponding limb projected beyond the level of the sound one. No one, however, has yet verified this opinion by dissection. That there is an inordinate secretion of synovial liquor in this stage of the malady is highly probable, but that its quantity is generally so great as to cause such a result is hardly a supposable case. We do know that there are frequently large accumulations of this kind in other joints, as the elbow and knee, without producing such an effect. In the second place, the phenomenon has been ascribed to the relaxed condition of the ligaments and muscles of the joint; but of this occurrence, if it really exist, we have no more positive proof than of the influence which has been attributed to the synovial fluid. A third opinion, and, in my judgment, the only correct one, is that the elongation in question is occasioned by the difference in the level of the two hips, that of the affected side being always lower than that of the sound side. Now, a careful examination of the body will not fail to satisfy us that this difference is real, and not imaginary, and, moreover, that it is always in direct proportion to the increase in the length of the limb. Whatever mode of examination be adopted the result will be the same, whether the patient be recumbent or erect. In the latter case, he is necessarily obliged to support himself upon the sound limb, which, for this purpose, he maintains in a state of rigid extension, at the same time throwing the corresponding hip somewhat outward, so as to bring the axis of the trunk on a line with the sound foot, and thus take off its weight from the affected extremity. This, it will be observed, hangs loosely from the pelvis, upon which the thigh is slightly flexed, while the leg is bent on the thigh, and the foot extended on the leg, the knee projecting prominently forward, much beyond the level of the opposite one, and the whole member resting upon the ball of the foot and toes. If this explanation be correct, as my experience warrants me in assuming, then the elongation of the limb, so constantly witnessed in this stage of the disease, is not real but imaginary, not positive but apparent.

I have never witnessed any shortening of the limb in this stage of the complaint, and doubt very much whether it really ever takes place. The symptom has been described as an occasional occurrence, and ingenious hypotheses have been framed to account for it, but as I have seen no instances of it, I do not deem it necessary to detain the reader with any further remarks concerning it.

Finally, there is generally, in this stage of hip-joint disease, a marked depression, or hollow, in the lumbar region, with a slight inclination of this portion of the spine toward the sound side, and an unusual prominence of the belly. The inferior portion of the spinal groove is also more distinct than natural.

In the third stage the nature of the disease is no longer doubtful, whatever it may have been previously. The symptoms are characteristic, being such as denote the extensive and frightful mischief that has been effected within the joint, in its several constituents. Matter now forms, and, by its pressure upon the inflamed structures, greatly aggravates the suffering. The existence of the suppurative process is indicated by an increase of pain; by a sense of throbbing and tension, deep and persistent; by severe swelling of the gluteal region, generally most prominent at the centre of the articulation; by œdema of the subcutaneous cellular tissue; and by a remarkably turgid and enlarged condition of the subcutaneous veins. The affected joint is intolerant of the slightest motion and manipulation, so much so, indeed, that the patient is unable to raise himself up or turn in bed without experiencing the greatest agony. Every attempt to move the limb is attended by similar results. The constitutional disturbance is always in proportion to the local suffering, and violent rigors, followed by high fever and copious sweats, are rarely absent. Sometimes, however, the abscess forms in a quiet and insidious manner, without any of the severe symptoms that usually accompany the suppurative process in this and other varieties of inflammation. As the matter increases in quantity it gradually works its way toward the nearest surface, its approach being denoted by the occurrence of a circumscribed, erysipelatous blush. Here there is generally distinct fluctuation, and the parts, feeling soft and boggy, soon yield at one or more points, followed by the escape of the contents of the sac.

The site at which the matter, when left to itself, obtains a vent, varies in different cases. Most generally it escapes at the gluteal region, either immediately over the joint, or in its immediate vicinity. The other situations at which it is most liable to discharge itself are the upper and back part of the thigh, a short distance below the great trochanter, the superior and external part of the groin, the sacro-sciatic notch, and the upper and inner surface of the thigh. Occasionally it escapes at several points, either simultaneously or successively, leaving thus a number of orifices, leading to a corresponding number of sinuses. These passages are sometimes very long and tortuous, and in old cases they are always lined by a false membrane. Many years ago I saw an instance in which there were nine distinct openings, and very recently another in which there were as many as twelve; two at the upper part of the thigh, and one just below the crest of the ilium, the remainder being scattered over the gluteal region.

Occasionally the matter escapes both externally and internally. In the case of a young gentleman, named Eaton, aged nineteen, whom I attended with the late Dr. Robert Morehead, the hip was pierced with several openings, while at the same time the matter had passed through the bottom of the acetabulum into the pelvis, round the rectum, through a small ulcer by which it had found its way out, for several months, by the anus. In the female it has sometimes escaped by the vagina, and in both sexes by the bladder. A few examples are on record in which it has passed, by a small opening, into the colon. Sometimes, again, as I have myself seen, the fluid lodges in a kind of sac, formed by the iliac bone and the soft parts of the pelvis, just as pus occasionally lodges between the skull and dura mater.

The matter in hip-joint disease is generally more fluid than ordinary pus, and also of a more greenish tinge. In fact, it very closely resembles the contents of a cold abscess, or the pus of a pulmonary cavern. It is often intermixed with small whitish particles, not unlike grains of soft boiled rice, with flakes of lymph, or even small clots of blood, especially when the antecedent inflammation has been unusually severe, or the parts have been roughly handled. More rarely it contains the debris of articular cartilage, ligamentous tissue, or osseous matter, in the form of little granules of a whitish gritty character. Occasionally, though rarely, large pieces of bone are discharged, and a few instances are related in which the greater portion of the head and neck of the thigh-bone escaped. The pus, when long confined, is often very fetid, and it is always so when, in consequence of a perforating ulcer of the bowel, it is intermingled with fecal matter; very frequently, on the other hand, it is entirely free from odor. Received into a vessel, and permitted to stand for a while, it generally separates into two parts, one at the bottom, solid and granular, the other at the top, fluid, and of a pale whey-like, or oleaginous aspect. When an abscess of this kind has once fully emptied itself, the subsequent discharge is often of a gleety character, ichorous, or thin and bloody.

The quantity of matter may be very small, or so abundant as gradually but surely to exhaust the system. I have repeatedly seen cases where, at the first evacuation, upwards of a pint flowed off, and where, subsequently, the discharge amounted daily, for a number of weeks, to several ounces. At times the suppurative action is almost entirely suspended, perhaps for months, when, either suddenly or gradually, it reappears, and becomes as profuse as before. Once established, it has no special limit as to its duration. I have recently examined a case where the discharge has maintained itself, with hardly any interruption, for two years. The hip and thigh are covered with numerous scars, bearing evidence to the repeated formation of abscesses. The patient is a lad, aged fourteen, much stunted in his growth. Whenever the discharge is unusually protracted it may be assumed, as a general rule, that there is serious and obstinate caries of the bony structures of the joint, attended with the occasional escape of gritty substance.

The symptoms which accompany the discharge of matter are such, usually, as are denotive of hectic irritation. The patient, at least for a time, has regular vesperal exacerbations, the face is flushed, the pulse is excited, the sleep is impaired, and during the night the surface is drenched with copious sweats. Rapid emaciation ensues, the strength declines, and the bowels at length become harassed with colliquative diarrhœa. Thus life may be gradually worn out by exhaustion, or, the discharge diminishing, reaction may take place, followed, sometimes even in apparently desperate cases, by ultimate recovery.

Suppuration, however, does not always take place in this stage of the complaint, or, if it do, the matter is either very small in quantity, or it is so soon absorbed as not to produce its characteristic symptoms. This is true, in many cases, even where the greatest ravages have followed the disease, as the complete disappearance of the articular cartilages, the round and cotyloid ligaments, and even a large portion of the head and neck of the thigh-bone.

It is seldom, according to my observation, that abscesses form externally to the joint in this disease without internal articular suppuration. Indeed, the occurrence is rare under any circumstances. During the progress, however, of the articular malady, the structures over and around the joint, participating in the inflammation, become hard and condensed from interstitial deposits, and from the same cause greatly enlarge in every direction.

The changes which the relative position of the affected limb undergo in this stage of the malady are striking and important, and deserving of special consideration. The extremity, now actually, and not merely apparently, shorter than natural, is much attenuated from the wasting of its fatty and muscular tissues, and remarkably disfigured in its appearance, the heel being considerably elevated, and the ball of the foot and toes alone touching the ground when the patient makes an effort to stand. The degree of shortening is variable, and not always by any means in proportion to the destruction of the head and neck of the thigh-bone, the acetabulum, and the connecting ligaments, which forms so prominent a feature of the disease at this period. While in some instances it does not exceed an inch, or, at most, an inch and a quarter, in others it amounts to twice and even thrice that extent. One-third, and sometimes even one-half of this, as I have satisfied myself by careful examination, is generally attributable to the elevation of the pelvis on the affected side. The position of the foot is variable. Sometimes it looks directly forward, but most commonly it inclines inward or outward, the latter direction being by far the more frequent. These differences are unquestionably due to the extent and nature of the ravages experienced by the hip-joint. When the acetabulum has suffered most severely, the foot usually inclines inward, as in dislocation of the thigh-bone upward upon the dorsal surface of the ilium; if, on the contrary, there has been much destruction of the head and neck of the thigh-bone, and the cotyloid cavity is only slightly involved, then the foot is generally everted, as in fracture of the neck of that bone, the external rotatory muscles tending to draw the whole limb in that direction.

The thigh, as a general rule, is flexed upon the pelvis, the angle of flexion varying from the slightest perceptible change to 45°. In most cases it inclines somewhat toward the sound limb, and occasionally, though rarely, it overlaps or crosses it. Sometimes, on the other hand, it stands off widely and most unseemly from its fellow, as in the case of a woman, aged twenty-five, who was under my charge several years ago. In this case, the two knees are habitually upwards of fifteen inches apart; the affected limb sticks out in the most grotesque manner, and the foot, in the erect posture, is at least six inches from the floor. The extremity of the thigh-bone, the head and neck of which appear to have been absorbed, can be plainly felt in the ischiatic notch. Nearly two years have elapsed since the disease first showed itself; a large abscess formed at the inner and upper portion of the thigh, and for a time the suffering was most severe and depressing. At present, there is an absence of all morbid action, a spontaneous cure having apparently taken place.

The thigh, moreover, is always in a painfully rigid state, owing, probably, to two circumstances, the contracted condition of the muscles of the hip and limb, and the formation of adhesions between the remnants of the head and neck of the thigh-bone and the surrounding parts. By taking hold of the knee a slight degree of flexion may, perhaps, be produced, but to abduct the thigh, or to move it backward, is generally impracticable; besides, every effort of the kind is ordinarily attended with excruciating suffering. Owing to the contraction of the hamstring muscles, the leg is commonly flexed on the thigh, and, for the same reason, the extensor muscles usually draw the heel upward toward the leg.

The great trochanter generally lies directly over the acetabulum, or in its immediate vicinity, forming a hard, firm, immovable, or nearly immovable, prominence, the nature of which it is not possible to mistake. In regard to the head and neck of the thigh-bone, they are, as was previously stated, usually completely annihilated, or so much wasted as to exist only in a rudimentary form. Much has been said by writers respecting the dislocation of this bone in this advanced stage of the disease; but generally in so vague a manner as to convey the impression that their statements are either entirely unfounded, or that they are based upon the assertions of others equally unentitled to credence. Few authors seem to have expressed an opinion upon the subject from personal observation. The valuable facts collected by Professor March, of Albany, in the extensive museums of the United States and of Europe, as well as in private practice, prove, most conclusively, that dislocation of the thigh-bone in any direction is exceedingly rare, as a consequence of this affection. A true luxation, such as occurs in the normal state of the parts, is, in fact, impossible, from the very nature of the morbid alterations experienced by the superior extremity of the bone in question,—its head being generally completely destroyed, and its neck in great measure.

Now, during the progress of the disease, this remnant of the neck, which is usually of a rounded conical shape, and frequently not more than three-quarters of an inch in length, if, indeed, so long, ordinarily places itself over the acetabulum, to the margins of which, and to the adjacent parts, it becomes, in the event of recovery, ultimately united. That it is occasionally drawn up beyond this point, especially when there has been complete destruction of the upper border of the acetabulum, backward toward the sciatic notch, forward upon the pubic bone, or downward and forward into the thyroid foramen, does not admit of doubt. Dislocation, however, in most of these directions can take place only in those cases where there has been extensive suppuration with separation or destruction of the soft parts, allowing the superior extremity of the bone to move about and thus seek, as it were, a new position. The upward displacement is, undoubtedly, most frequent, but even this must be extremely rare. In one of the cases related in a subsequent page, the end of the thigh-bone projected above the acetabulum, where it had formed for itself a superficial socket in the iliac bone, admitting of very slight motion. The real cause, then, of shortening in the third stage of tuberculosis of the ileo-femoral articulation is not dislocation, as has been so often asserted, but the destruction, partial or complete, of the head and neck of the thigh-bone, along with a certain degree of elevation of the corresponding hip.

III.—DIAGNOSIS.

Although the symptoms of this disease are usually well-marked, especially after the lapse of some time, my observation satisfies me that it is extremely liable to be diagnosticated erroneously. The inexperienced practitioner, misled by the seat of the pain, too often contents himself with a most superficial examination, and, taking this as the basis of his therapeutic indications, is very apt to make a wrong application of his remedies, addressing them, perhaps, solely to the knee, which is only sympathetically involved, when they ought to be directed exclusively to the hip, the actual seat of the morbid action. Numerous cases, illustrative of the truth of this remark, have fallen under my observation, and there are, I am sure, few surgeons in extensive practice who have not, like myself, had occasion to lament the great mischief that has thus been entailed. In a malady so grave as this an error of diagnosis may be fraught with the worst consequences both to part and system, eventuating, as it necessarily must, in the loss of precious time; for it but too often happens that, when the true nature of the disease is discovered, all our efforts to arrest its progress are unavailing.

The affections with which this disease is most liable to be confounded, or which may, at least for a time, obscure its diagnosis, are sprains and rheumatism of the ileo-femoral articulation, psoas abscess, purulent collections in the vicinity of the hip and in the upper part of the thigh, and inflammation of the periosteum of the great trochanter.

A sprain, twist, or contusion of the hip-joint is not an unfrequent occurrence, and may, if followed by considerable inflammation, give rise to severe pain and stiffness, seriously weakening the part, if not completely disqualifying it for the performance of its functions. The consequence is that the patient, in attempting to walk, raises the hip of the affected side and relaxes the corresponding limb, by bending the knee and retracting the heel, very much as in the earlier stages of tuberculosis. The muscles, also, by degrees become flabby and attenuated, and there is a sensible diminution of the temperature of the cutaneous surface. The gluteo-femoral crease is in time effaced, and even the general health may suffer. The signs of distinction are, the history of the case, the absence of pain in the knee, the greater latitude of motion, the absence, in general, of constitutional disturbance, and, lastly, the fact that the foot, although everted, is usually easily rotated on its axis, whereas, in strumous disease of the hip-joint, it is commonly pretty firmly fixed.

Rheumatism of the hip-joint, chronic and subacute, is generally caused by cold, or by sudden suppression of the cutaneous perspiration. It is seated principally in the ligamentous and synovial structures, the cartilaginous and osseous being seldom involved, except in very severe and protracted cases. The pain, which runs down the front of the thigh, is dull, heavy, or aching; the gait is limping, the pelvis is higher on the affected side than on the sound, and the limb exhibits, in the main, the same attitude as in lameness from sprains and contusions, with this peculiarity, that the foot is always strongly everted, while in the former case it is generally inclined inward. The patient in the morning complains of stiffness in the hip, which usually diminishes very sensibly after exercise, but is sure to return in the evening if there has been much exertion or fatigue. The muscles of the thigh are attenuated, but more firm than in tuberculosis, while those of the leg often retain their normal bulk; the gluteo-femoral fold is effaced; the limb, owing to the obliquity of the pelvis, is shorter, often from one to two inches, than natural; the great trochanter is uncommonly prominent; and a creaking noise is generally heard if the head of the thigh-bone be moved forcibly upon the acetabulum. Now, although these phenomena bear a very close resemblance to those of strumous disease of this articulation, yet the absence of severe suffering at night, and at all times at the knee, the marked relief afforded by gentle exercise, the trifling annoyance from pressure, percussion, and motion, even when carefully performed, and the rare occurrence of rheumatism in children, together with the frequent coexistence of this disease in other parts of the body, will generally be found sufficient to prove that the affection is not tubercular.

It is not often that psoas abscess can be mistaken for tubercular disease of the hip-joint; for, although the matter which is poured out in its latter stages, occasionally points to the outside of the groin, or at the upper and inner part of the thigh, there is always the most marked difference in the character of the two swellings, to say nothing of other symptoms. In psoas abscess the tumor is usually situated above Poupart's ligament, while in hip-joint disease it is commonly below; in the former, it always sensibly diminishes and sometimes even entirely disappears under pressure, or when the patient lies down, but quickly reappears when the pressure is removed, or when the patient raises himself up; in the latter, on the contrary, it never changes its position, or if it do, it is in consequence solely of the force of ulceration, absorption, and gravitation; in psoas abscess the swelling receives a distinct impulse in coughing, laughing, and crying, which is not the case in tuberculosis of the hip-joint.

Again, in psoas abscess, the principal pain is in the loins; it is fixed there, and is always greatly increased by the erect posture, as well as by every attempt to extend the corresponding limb. In hip-joint disease, the pain is most severe in the knee, or in the knee and hip. In psoas abscess there is, at no period, any change in the position of the great trochanter, nor any alteration in the length of the limb; in hip-joint disease, on the contrary, especially in its more advanced stages, these are prominent symtoms. Finally, psoas abscess occurs nearly always after puberty, whereas the other affection is most common in early childhood.

Sometimes large deposits of pus take place in the cellular tissue of the nates, or beneath the gluteal muscles, and, forming a prominent tumor in the direction of the ileo-femoral articulation, may thus simulate abscess of the hip-joint from tuberculosis. These accumulations are commonly the result of external injury, or of a phlegmonous, rheumatic, or erysipelatous state of the system, and are, therefore, in general easily distinguished by their history, by the rapidity of their progress, by the severity of the local distress, and by the comparatively prompt recovery of the parts after the evacuation of their contents. Cold abscesses of the nates, besides being exceedingly infrequent, exhibit none of the diagnostic signs of articular disease, especially such as pain in the knee, or pain in the hip-joint upon rotating the thigh, so characteristic of the latter malady. It is only when they depend upon caries of the innominate bone that the distinction would be likely to be attended with difficulty, and in this case a thorough exploration with the probe would probably furnish the requisite light.

Finally, diagnostic embarrassment, to an annoying extent, occasionally arises from periostitis of the great trochanter, in persons of a rheumatic or gouty habit of body. The fibrous membrane of this portion of the femur becomes exquisitely painful and tender to the touch, under the slightest motion and percussion, and the disease, extending above the neck of the bone and capsular ligament of the joint, causes distress and difficulty in walking, with elevation of the corresponding side of the pelvis, similar to what is seen in coxalgia. The soft parts around are swollen and puffy, giving the hip an increased breadth and thickness; by and by, suppuration takes place, sinuses form, and small portions of the bone separate and come away. Unless the case be well managed the joint becomes stiff, and the patient does not regain his health for a long time. The signs of distinction are the persistence of the gluteo-femoral crease, the coexistence of rheumatism or gout in other structures or regions, and the fact that the disease usually occurs later in life than coxalgia.

But it is chiefly in the very early stages of this affection that erroneous views of its diagnosis are liable to be formed; when it is fully established the phenomena are generally too well marked to be mistaken. It has been seen that the very first symptom, in every case, is pain in the knee; so uniform and constant, indeed, is this occurrence that it must be regarded as pathognomonic, and yet, as was previously stated, it rarely happens that it is referred to its true source. Instead of being considered as an expression of disease of the hip-joint, it is too often regarded merely as an effect of neuralgia, rheumatism, or injury of the knee, to which, accordingly, the treatment is exclusively directed. Its great value, as a diagnostic, is totally overlooked, and thus the disease is allowed to progress, at the only time almost when it admits of prompt and radical cure.

In order to avoid this serious and too common mistake, a most thorough examination should be made in every case presenting the slightest suspicion of the existence of tuberculosis of the hip-joint. The very fact that there is pain in the knee, severe in degree, and of frequent recurrence, should of itself excite the alarm of the surgeon; but especially should he be on his guard if, added to this, there is a limping in the gait, an increase of suffering after slight exercise, and disturbed sleep at night. If the diagnosis is obscure, the examination must be repeated, again and again, until it is perfectly cleared up. To conduct the investigation properly the patient must be completely stripped, and viewed both behind and in front, as he stands on the floor. If there be any flattening of the nates, unusual prominence of the trochanter, or change in the gluteo-femoral fold, it will be sure to be detected, and so, also, if there be any alteration in the attitude, size, or length of the corresponding limb. If the patient be now requested to walk, the amount of limping will be discovered, as well as the manner in which he raises and moves the leg and foot. To complete the investigation, the patient is now stretched out on the floor, or on a hard lounge, with a view of ascertaining the amount of suffering produced by rotating the head of the thigh-bone upon the acetabulum, and also by bringing these parts forcibly into contact with each other by percussing the knee, the leg being flexed, or the sole of the foot opposite the ankle, the foot being bent on the leg. The patient being next turned upon his abdomen, the hip is thoroughly examined, first, with reference to the condition of its soft parts, and, secondly, with relation to the sensibility of the component structures of the joint; finally, if there be any obliquity of the pelvis it may be easily observed both in the erect and in the recumbent posture; and any change in the length of the affected limb may be determined by extending a piece of tape, or other suitable band, from the antero-superior spine of the ilium to the inner side of the lower extremity of the patella. The difference in the length of the measure on the two sides will give the difference in the length of the thighs, or the distance between the hip and knee joints. The use of chloroform will often be of great service in conducting the movements of the limb while the patient is recumbent, especially when the parts are very painful and intolerant of manipulation.

IV.—MORBID ANATOMY AND PATHOLOGY.

The morbid changes induced by this disease vary, as might be supposed, according to the different stages of its progress. As it never proves fatal in its incipiency, all that we know of these changes at this period has been learned accidentally, by examining the bodies of those who have died of other maladies. Enough, however, has been ascertained to show that they do not differ materially, if any, from those of ordinary inflammation. The synovial membrane, which is commonly first implicated in the morbid action, affords evidence of slight vascularity—a few delicate, straggling vessels, loaded with blood, being observable upon its surface, and, in most cases, it is somewhat opake and softened, not uniformly, but at certain points. An appearance of thickening is often imparted to it, from a deposition of lymph, which being poured out, even quite freely in the disease, soon assumes a pulpy consistence and a pale-yellowish color, though occasionally it verges upon greenish. Sometimes it is shreddy, tomentose, or filamentous. The articular cartilage, if seriously involved in the inflammation, is of a dull whitish, or slightly grayish aspect, and somewhat thickened, softened, and partially separated from its osseous connections. The cancellated structure of the bones is abnormally vascular, light, porous, and humid, being at the same time easily broken and cut. Not unfrequently its cells are distended with yellowish tubercular matter, of a semi-solid caseous consistence; or, this substance presents itself in the form of distinct masses, free or encysted, and, perhaps, not larger than a millet-seed. However this may be, these changes are always more conspicuous in the head and neck of the thigh-bone than in the innominate bone, which is seldom seriously affected at this stage of the disease. The round ligament usually suffers early, being abnormally red, tumefied, and softened. The synovial fluid is generally increased in quantity, but rarely to any considerable extent.

As the malady advances, the alterations above described become more distinctly defined; the disorganizing process being now in full play, its devastating effects are plainly visible in every portion of the joint. The lymph gradually increases in quantity, and is often intermixed with a little sero-purulent matter, or thick greenish-looking pus. The synovial membrane is partially destroyed, and what remains is of an opake, muddy, and ragged appearance. The cartilage is ulcerated, pulpified, discolored, perforated, and almost completely detached. The bony structure is very red, soft, carious, rough, and easily crumbled. The round ligament is in a great degree destroyed, and the capsular ligament, as well as the cotyloid, exhibits well-marked signs of inflammation, being loose and spongy at one point, attenuated at another, and perhaps thickened or hypertrophied at a third.

The disease having reached its acme, the structures of the joint are completely subverted, with hardly any traces of their original appearances. Pus is now usually seen, often, indeed, in large quantity, with all the qualities of strumous matter. This, however, is not always the case; for, at times, it is thick and pultaceous, caseous, ichorous, or sero-sanguinolent. In one instance, observed not long ago, I found it very thin, and almost black, from the effects evidently of the necrosed condition of the hip-bone. The synovial membrane, the round ligament, the articular cartilages, and the head and neck of the thigh-bone, with the margins, and frequently, also, the bottom of the acetabulum, are partially destroyed, or even completely annihilated. In the more severe cases the cotyloid, the transverse, and even the capsular ligament are entirely absorbed, the surrounding parts are extensively separated by the ulcerative and suppurative processes, numerous fistulous openings exist, and the gluteal muscles are transformed into dense, firm bodies, of a pale-reddish, yellowish, or whitish color. Cases are not wanting, especially when the disease is of long standing, in which these muscles undergo the fatty degeneration. Occasionally both trochanters are absorbed; or there is extensive caries of the innominate bone; or the head and neck of the thigh-bone are necrosed; or the joint contains numerous fragments of bone and cartilage; or the bottom of the acetabulum being perforated, the matter extends into the pelvis, and passes off by the rectum. In children, prior to the completion of the ossific process, the hip-bone has been found separated, at the acetabulum, into its three primitive pieces.

The head and neck of the thigh-bone being generally absorbed, the remnant of the superior extremity of this bone usually lies across the acetabulum, or in its immediate vicinity. Occasionally it is drawn up a little beyond this cavity, against the surface of the ilium, resting in a slight depression, which, however, bears only a very faint resemblance to a new socket. A few instances, and but a few, have been observed, in which it was found, on dissection, forced backward into the sciatic notch, forward upon the pubic bone, or downward into the thyroid foramen. When the disease has expended itself mainly upon the acetabulum, the head of the thigh-bone may remain in its original position; or it may even pass, as, in fact, it has been known to do in several cases, into the pelvis.

If death takes place after a process of recovery has been set up, the acetabulum will be found filled by a white, fibrous, organized substance, the extremity of the thigh-bone being anchylosed, or firmly attached by new matter to the surrounding structures. It is very rare for a new socket to be formed; yet that this is not impossible is proved by dissection, as well as by specimens in different museums. In time, the artificial joint may admit of considerable motion, as is seen in persons who have recovered from the disease, attended with great shortening of the limb; but, in general, the motion is extremely restricted. Sometimes an imperfect ligament is formed round the bony knob above described, and the surface of this bony knob may even become slightly tipped with cartilage. Finally, osseous growths, short, irregular, and friable, occasionally make their appearance upon the thigh-bone, and also upon the innominate bone, in the vicinity of the former disease.

The bodies of those who die of strumous disease of the hip-joint, or while laboring under this affection, usually exhibit serious pathological changes in some of the internal organs. These changes appear to be the direct result of the tubercular cachexy, which is generally so well marked in the latter stages of the local malady, and they exist in various forms and degrees in different structures. The most common are tubercular deposits and dropsical effusions, which are rarely entirely absent in any case, especially if of long standing.

Tubercles of the lungs are very common; they often exist in great numbers, especially in the summits of these organs, and they always exhibit the same characters as in ordinary phthisis. Cavities sometimes form, but death usually occurs before they attain any considerable magnitude. The bronchial ganglions commonly participate in the pulmonary disease, being enlarged and tuberculized. Occasionally extensive adhesions are found between the lung and costal pleura, with or without serous and other effusions. The heart is seldom affected.

The peritoneum is sometimes extensively tuberculized, and considerable quantities of water are often found in its cavity. In children, the lymphatic ganglions of the pelvis and mesentery are apt to suffer from strumous deposits, and similar changes are occasionally witnessed in the spleen. The liver is often cirrhosed and hypertrophied. Now and then the glands of Peyer suffer. In one of the cases mentioned below, they were pretty extensively ulcerated. The pancreas, stomach, and genito-urinary organs are usually sound. The rectum, and even the colon, the vagina, and the bladder, are sometimes found perforated, the matter passing directly from the hip-joint through the abnormal aperture. The blood is generally very thin, and deficient in fibrin and coloring matter. The lower extremities, and even the hands, face, and genital organs are, at times, anasarcous, especially when the system has been worn out by tubercular disease of different parts of the body.

Tuberculosis of the hip-joint, as the name correctly implies, is essentially a scrofulous disease, bearing the same relation to the structures of that articulation that phthisis bears to the lungs; in other words, it is, to use a common but sufficiently expressive phrase, like scrofulous complaints in general, merely a local symptom of a constitutional disorder. Take away this constitutional vice, this strumous cachexy, and in either case no local disease can arise. That this is not a mere assumption, but an indisputable fact, is abundantly established by the symptoms and progress of the local affection, and by the appearances revealed on dissection of those who die of it.

Tubercular disease of an organ does not necessarily suppose in that organ the existence of tubercular deposits. In strumous corneitis, for example, we find nothing of the kind, and yet no one, at all familiar with the character of that malady, would deny it such a parentage. In certain diseases of the skin there is undoubtedly scrofulous action, without, so far as can be determined, any secretion of tubercular matter. When the disease begins in the synovial membrane of the hip-joint, it probably deports itself in the same manner as when it invades the tunics of the eye; and the same thing, there is reason to conclude, occurs when it takes its rise in the cartilaginous tissues. When, on the contrary, it commences in the osseous structures, whether in the thigh-bone or in the innominate bone, there may, and no doubt often is, a genuine deposit of this kind, such as is so frequently met with in the short bones, as those of the spine and foot, and also in the articular extremities of some of the long bones. Such, then, it is believed, is the true pathology of this affection; but to enter into any further discussion here would be to describe the pathology of strumous affections in general, for which this is not the proper occasion.

VI.—CASES OF HIP-JOINT DISEASE.

The following cases and dissections are introduced here as further illustrations of the progress, pathology, and complications of this affection.

CASE I.—Eliza Kennedy, aged nine years and a half, the oldest of four children, of fair complexion, with light hair and eyes, and of a naturally delicate, strumous constitution, became the subject of tubercular disease of the left hip-joint in April, 1841, soon after a severe attack of measles. For the first few months she suffered severely from pain in the knee and inner part of the thigh; but about this period it left these points, and fixed itself at the seat of the morbid action, shifting its place, however, occasionally, especially after exercise, from which her physician did not restrain her. The gluteal region was much swollen, and the limb gradually became stiff and useless. Thirteen months had elapsed before I saw the case. Suppuration had already taken place, and several sinuses existed in the neighborhood of the ileo-femoral articulation, discharging a considerable quantity of thin gleety-looking matter. The limb was inverted, much shortened, and in close contact with the sound one; the thigh being, at the same time, a good deal flexed upon the pelvis. The child was hectic, greatly emaciated, racked with pain, and harassed with diarrhœa and night-sweats. In a few months a hacking cough set in, which rapidly increased in severity, and, together with other symptoms, only too clearly indicated the existence of confirmed phthisis. Death occurred nearly two years after the first signs of hip-joint disease, preceded by slight ascites, anasarca of the lower extremities, and the formation of new sinuses in the gluteal region.

Both lungs were crowded with tubercles, especially at their summits; most of them were in a crude state, but several were quite soft, and, on the right side, a cavity existed capable of containing a pigeon's egg. Extensive adhesions were found between the costal and pulmonary pleuræ. The bronchial ganglions were enlarged, but not tuberculized. The heart was normal. The peritoneal cavity contained nearly half a gallon of limpid serum. The spleen and mesenteric ganglions were crowded with tubercular matter, mostly in a crude state. The stomach, bowels, liver, pancreas, and genito-urinary organs were sound.

The gluteal region was unnaturally hard and prominent, and the seat of four sinuses, three of which communicated with the diseased joint, while the other, situated just below the antero-superior spine of the ilium, led to the interior of the pelvis. By pressure, a small quantity of thin gleety fluid could be forced from these openings. The principal prominence of the hip was formed by the great trochanter, which lay immediately beneath the skin, and much nearer to the sacro-sciatic notch and the tuberosity of the ischium, than in the normal state. The head and entire neck of the thigh-bone, except a small tubercle, hardly half an inch long, and of a rounded shape, had disappeared by absorption. This remnant, which was quite rough and considerably softened, closely embraced the acetabulum, and was directed backward toward the sacro-sciatic notch, from which it was distant about three-quarters of an inch. The shaft of the thigh-bone was strongly flexed upon the pelvis, and inclined over toward the opposite side, thereby throwing the trochanter prominently outward and upward. The acetabulum had lost its cup-like appearance, its margins having been removed by absorption, leaving thus a shallow elongated depression, closely embraced, as just stated, by the remains of the neck of the thigh-bone. The capsular ligament was entirely destroyed, except a small portion at the outer and upper part of the joint, which was much thickened and otherwise altered. There was no dislocation, properly so termed, though the two articulating surfaces had undergone great changes in their relative position. Complete anchylosis existed. The gluteal muscles were remarkably pale, and so much wasted as to render their fibres very indistinct. All the soft structures about the joint were excessively indurated, from the deposition of plastic matter. Running along the inner surface of the innominate bone, in a transverse direction, was a long sinus, which opened, as already seen, just below the anterior spine of the ilium.

CASE II.—James Franklin, a negro, aged ten years and a half, the third of eight children, was attacked with symptoms of hip-joint disease early in December, 1853. His health, up to that time, had always been delicate, although he had never been confined to his bed. None of the members of the family had ever suffered from scrofula in any form. Among the earlier symptoms complained of were a sense of uneasiness in the corresponding knee, and some degree of stiffness in the hip, causing a slight halt in the gait. As the affection advanced the lameness increased, and the boy experienced severe pain in the knee, usually aggravated during the night and during changes of the weather. Superadded to these symptoms were frequent startings of the limb during sleep, causing the patient to wake, and even to scream out. On such occasions he was in the habit, for several months, of jumping up in bed in a species of fright or partial delirium, some time being generally required to rouse him sufficiently to make him comprehend his situation. By-and-by he was able to exercise only on crutches; his general health began to decline, and he became sensibly emaciated. When I first saw him, early in November, 1854, he was hardly able to walk or stand, on account of the stiffness of the hip-joint; and it was evident that his general health had greatly suffered. On examining him I found there was great flattening of the nates of the left side, with complete effacement of the groove between the thigh and hip, and elevation of the corresponding iliac crest; the knee was greatly flexed, and, on holding the boy up in the erect position, it projected several inches beyond the sound one, the heel being, at the same time, raised more than two inches from the floor, and the toes inverted. Some motion existed at the hip in the direction of flexion, but the thigh could neither be extended nor drawn away from its fellow. The abdomen was considerably enlarged, but there was an entire absence of disease of the glands of the neck.

A week after I first saw the boy, I applied the actual cautery, with a view of establishing a large issue. The eschar separated about the usual time, and the resulting sore seemed to be productive of some benefit, as was evinced by the diminution of the pain, and the improvement in his appetite and sleep, the former of which became quite voracious. About the middle of December the tumidity of the abdomen began sensibly to increase; he now voided but little urine, and he suffered under great embarrassment of breathing, accompanied with frequent and severe paroxysms of coughing. It was evident that he was laboring under ascites and serious disease of the lungs. Growing gradually worse, he expired on the 11th of February, 1855, having for the last fortnight labored under excessive œdema of the legs and scrotum, and been unable to lie down for a single moment on account of his dyspnœa.

The body was examined the day after death, with the assistance of Dr. William H. Lyle.

The abdomen contained about three quarts of limpid serum; the peritoneum, especially the pelvic division, was studded with an immense number of incipient miliary tubercles; the glands of Peyer were ulcerated over a considerable surface, and immediately over each ulcer the serous covering was studded with well-developed tubercles. The spleen was filled with similar bodies, but they were much larger, and evidently in a much more advanced state. The mesenteric ganglions formed a large indurated mass, each gland being filled with tubercular matter, which, in some of them, had advanced toward softening. The pelvic lymphatic ganglions were likewise enlarged and tuberculized. The stomach, liver, large bowel, and genito-urinary organs were healthy. Both lungs had contracted extensive adhesions, evidently of long standing, to the walls of the chest; on the right side they were formed by a false membrane at least one-third of an inch in thickness, and presenting here and there tubercular deposits. The right lung was much softened, hepatized, and extensively tuberculized. Upwards of eight ounces of serum was found on this side of the chest. The left lung was nearly sound, but contained some tubercles at its summit. The heart and large vessels were normal. The bronchial ganglions were enlarged and tuberculized.

The gluteal muscles were pale, indurated, much wasted, and closely matted together. The round ligament, and the whole of the capsular, except the inner and inferior portion, were destroyed; what remained was thickened, indurated, and ragged. The upper extremity of the head of the thigh-bone was absorbed, leaving a rough, scabrous surface, partially incrusted with lymph. The remainder of the head was much softened and covered with cartilage, which, however, was entirely loose over a large space on a line with the great trochanter, as well as thickened and softened in its texture. The neck of the bone was hardly half an inch in length, and completely horizontal in its direction. The thigh-bone was strongly inclined inward, and flexed upon the pelvis. The hip was rendered extremely prominent by the projection of the great trochanter. The bottom of the acetabulum was thickly incrusted with organized lymph, and perforated at its iliac side; its edges, which were still covered with fibro-cartilage, being softened and partially absorbed. Directly over the opening, on the pelvic aspect of the innominate bone, lay an enlarged lymphatic ganglion. The head of the thigh-bone still retained its place in its socket, though it was drawn up more than half an inch beyond its natural situation. The two articulating surfaces were closely united by organized and tolerably firm lymph.

CASE III.—The subject of this case was Harriet, a negress, aged twelve years. She had always been healthy, and no member of her family had ever had scrofula. A short time before she was attacked with hip-joint disease she became affected with inflammation of the eyes, which the physician in attendance pronounced to be of a strumous nature. It soon yielded to treatment.

About two years and a half ago, she began to complain of a severe pain in the left hip and knee, particularly the latter, which was supposed to be of a rheumatic character, and was treated accordingly. No amendment, however, followed; instead of this, the symptoms steadily progressed, the local distress increasing in violence, and the limb becoming so much contracted at the knee as to cause considerable lameness. The pain, at length, after some months, entirely ceased, but the difficulty of walking became so great that she was unable to move about without the aid of crutches. The general health, meanwhile, was not materially impaired; she was rather thin, however, and her sleep was occasionally interrupted by spasmodic twitches of the limb. Such was her condition at my first visit, in December, 1854. Upon examination, I found the characteristic flattening of the nates, the effacement of the gluteo-femoral groove, and the elevation of the iliac crest, with very marked shortening of the limb, which was bent at the knee, and inverted at the toes. Every attempt to draw it away from the opposite one was attended with severe pain, and similar effects were produced by percussion of the knee and foot. Pressure over the hip-joint caused considerable uneasiness, but no pain, properly so-called. The child was much emaciated, sleeping badly at night, and having but little appetite. She was unable to stand, except when assisted, and she experienced frequent attacks of pain at night.

The application of the actual cautery, a few days after my first visit, had the effect of relieving her pain, and of improving her general condition. After a few weeks, however, she became worse, being seized with a troublesome diarrhœa, which continued to harass her until she died. About three weeks before this event, she became affected with a severe cough and some dyspnœa, and there was a return of pain in the hip with all its original intensity. She now lay constantly on her right side; had fever most of the time, especially at night; the emaciation rapidly increased, and she died, completely exhausted, on the 18th of February, 1855, less than two months and a half after I took charge of the case. The immediate cause of her death was evidently pneumonia and diarrhœa.

About a pint of serum was contained in the peritoneal cavity. The mesenteric glands were considerably enlarged, and pervaded with tubercular matter. The alimentary canal, the liver, spleen, pancreas, kidneys, and bladder were healthy. Both lungs exhibited evidence of pneumonia, but the right in a greater degree than the left, and the former also contained, especially at its summit, a number of miliary tubercles, for the most part in a solid state.

The gluteal muscles were much reduced in size, pale, indurated, and apparently in a fatty condition. The round ligament and all of the capsular, except the lower posterior portion of the latter, had disappeared. The acetabulum was unusually deep, from the absorption of its bony walls, which were very rough, and deprived of cartilage. At its centre it had the appearance of giving way; and at its supero-posterior part, opposite the sciatic notch, was an opening large enough to receive the end of the thumb, caused by the detachment of a piece of bone. The margins of the acetabulum retained their natural sharpness and covering. The pubic bone was ulcerated and softened at its cotyloid extremity. The neck of the thigh-bone was abnormally short and horizontal, and encircled by the remains of the capsular ligament. About one-half of the head was gone, the portion which was left having a rough, scabrous surface, the exterior of which was covered with cartilage in a state of inflammation and partial softening.

CASE IV.—Timothy Connelly, twenty-six years old, a day-laborer, of intemperate habits, and a native of Ireland, was admitted into the Louisville Marine Hospital, on the 3d of September, 1854, on account of disease of the left hip-joint, first perceived six months previously. The earliest symptom in the case was a pain in the joint and its immediate vicinity, accompanied with slight swelling, which gradually increasing in severity, at length extended down the limb as low as the middle of the thigh. At the time of his entrance he was unable to use the limb in standing or walking, and he complained of severe pain in the hip, knee, and back. The thigh was somewhat flexed on the pelvis, the heel was raised upwards of two inches from the ground, and the foot was inverted. During the last two weeks the swelling of the thigh had much increased, and the parts were now quite tender on pressure, with a distinct sense of fluctuation. A free incision being made, a large quantity of dark-colored and offensive matter was discharged, evidently scrofulous in its character. A tent was introduced to promote the escape of pus, which continued for several weeks. The man was placed on tonics and alteratives, under which he seemed to improve somewhat. Sometime after, the opening in the abscess being permitted to close, matter again accumulated in the sac, requiring another puncture. This was made on the 28th of November, before the medical class at the Hospital, and gave vent to about sixteen ounces of ill-elaborated and fetid pus. A tent was again inserted, and the patient was put upon the use of tonics with a nutritious diet. But little improvement followed, debility being a prominent symptom, although there was seldom any pain in the hip or knee, except when he attempted to walk. On the 10th of January, 1855, the man was again brought before the class, when I laid open a long sinus, extending along the antero-external part of the thigh, toward the interval between the great trochanter and the anterior spinous process of the ilium, the incision being at least eight inches in length. The same treatment was continued, with the addition of a compress and bandage to the affected limb.

On the 1st of March, when my tour expired, the wound was still unclosed, discharging daily a small quantity of unhealthy-looking pus, and manifesting but little disposition to heal The patient was gradually growing weaker, and now complained of a great deal of pain in the hip-joint and lumbar region. Cough, and a sense of constriction above the chest, accompanied with a dull pain, were a source of frequent annoyance to him. The progressive emaciation and debility, with other corroborative symptoms, led to the suspicion that the original affection was now complicated with pulmonary phthisis, and the suspicion was fully verified by a careful examination. He continued gradually to decline, and died, completely exhausted, on the 3d of May, 1855.

The body being inspected two hours after death, the legs and feet were found to be quite œdematous; the left foot and knee were much inverted; and the limb was an inch and three-quarters shorter than the sound one. The peritoneal cavity contained upwards of a quart of water, but all the abdominal viscera were sound. The kidneys, supra-renal capsules, bladder, and prostate gland were free from disease. The lungs contained crude disseminated tubercles at their summits,—a few verging on softening. Similar deposits were found in the bronchial lymphatic ganglions. The pleura and the heart were normal. The brain was not examined.

The acetabulum was completely denuded of cartilage, very rough, and of an unnaturally darkish color; its edges being beveled off, it presented an elongated, ovoidal shape, being three inches in height and two inches and a half in breadth. The capsular and round ligaments were entirely destroyed, but the transverse was apparently unaffected. Extending inward, along the ramus of the pubic bone, was a large sinus, filled with a black, offensive fluid, which also existed, in considerable quantity, in the joint itself. The head and the whole of the neck of the thigh-bone, except a short, thick, rough stump, had disappeared. The great trochanter rested against the upper edge of the cotyloid cavity, the upper extremity of the latter being received into a small depression of the former. From the flexed position of the shaft of the bone, the trochanter lay across the acetabulum in an oblique direction, and consequently much nearer both to the spine of the ilium and the sacro-sciatic notch than in the natural state. The articulating surfaces were firmly united by plastic matter, and, although their relative position was greatly altered, there was no dislocation. The gluteal muscles were much attenuated, very pale, indurated, and matted together. Some of their fibres had evidently undergone the fatty degeneration.

CASE V.—Thomas Farrell, Irishman, aged twenty-three, laborer, with black hair and eyes, pale complexion, and delicate constitution, was admitted into the Louisville Marine Hospital, February 17th, 1852, for what, at the time, was supposed to be typhoid fever. His principal symptoms were cough, muco-purulent expectoration, and hectic irritation, under which, becoming gradually exhausted, he expired on the 16th of March. He had had hip-joint disease some years previously, but had so far recovered from it as to have been induced to believe that a spontaneous cure had taken place.

The dissection was made several hours after death. The body was sallow, and much emaciated The right lower extremity was three inches shorter than the left, the toes were much inverted, and the sole of the foot rested against the instep of the sound one. The knee was also turned inward, and three inches above the opposite one, but not in advance of it. The great trochanter was extremely prominent, and distant three inches and a quarter from the antero-superior spinous process of the ilium. Four old scars existed in the groin and round the great trochanter. The gluteal muscles were much wasted, and transformed almost completely into a pale, whitish, fatty, and fibrous substance. The head and neck of the thigh-bone had been absorbed, being represented by a hard, ivory-like, rough, scabrous knob, mounted some distance above the acetabulum upon the iliac bone, where it had formed a superficial socket, extending into the original cavity, which was filled up by osseous matter. The new joint thus formed, however, hardly admitted of any motion, and some force was required to break up the adhesions between the contiguous surfaces. The capsular ligament immediately round the new joint was very dense, and nearly three lines in thickness. All the rotator muscles of the limb were pale and atrophied, while the psoas and iliac muscles were completely transformed into fibrous tissue.

Both lungs were crowded with gray granulations, which were particularly abundant in the summits of these organs. In none of them had the softening process commenced. Both lungs were of a dark-purple color, heavy, and much engorged with blood. Ancient adhesions existed on both sides, but more extensively on the left than the right. The bronchial tubes and the lymphatic ganglions were sound; as also the heart.

The spleen, liver, and kidneys, especially the first, contained an immense number of tubercles, discreet, small, rounded, and solid. Of those in the liver, which was of the normal bulk, many were tinged with bile. The spleen was considerably hypertrophied, and the kidneys, particularly the left, were of unnatural size. The ureters, bladder, and prostate gland were healthy. Many of the mesenteric ganglions were enlarged and tuberculized. The stomach, bowels, and pancreas were natural.

CASE VI.—The following case is subjoined as exhibiting the state of the part and system in a somewhat advanced stage of the disease:—

Mary Ziegler, German, aged six years, light hair, eyes, and complexion, was seized with symptoms of hip-joint disease, in October, 1854. In the month of June previously she had a severe attack of cholera, which left her, until late in the season, in a very feeble and emaciated condition. Up to this time she had always enjoyed good health. The affection of the hip-joint came on without any assignable cause. During the first few months the child suffered excruciatingly both day and night, the pain shifting about from the hip to the knee, and from these parts to the abdomen and the lower dorsal vertebræ, which, as was very apparent from their posterior curvature, must also have been the seat of tuberculosis. The upper and inner portion of the thigh was likewise a frequent seat of severe pain. In consequence of the violence of her suffering the little girl was deprived of sleep and appetite, and became again rapidly and greatly emaciated. Toward the spring of 1855 she began to improve for a short time, and the parents flattered themselves that she would gradually recover. These hopes, however, proved delusive, for after a few months all her distress returned, and late in the season, that is, sometime in November, a large abscess formed in the upper and forepart of the thigh, just below the groin, and soon breaking, discharged upwards of a pint of pus. This afforded great relief, for previously to this event, for several months, she endured excessive pain. This opening still existed, together with another on the inside of the thigh, near the groin, and one on its posterior surface, about two inches below the great trochanter. The discharge from them was very slight.

The present condition of the child, March 17th, 1856, is as follows:— She is in great degree free from pain, rests well at night, sits up nearly constantly in the day, and has a pretty good appetite, with a reasonable share of flesh and strength. She has still some diarrhœa, under which she has labored, more or less, ever since the commencement of her illness. The right hip is much larger than the left, as well as more flat, and considerably elongated transversely. The crease between the thigh and buttock is effaced, and the swelling extends, in a tapering manner, as far down as the upper third of the thigh. The surface feels hard, and has a perfectly smooth appearance, except at the site of the trochanter, where it is a little rough. The trochanter itself is quite prominent and firmly fixed in its new position. The thigh is in close contact with its fellow, and considerably flexed on the pelvis; the knee is in advance of and above the other; the leg is flexed on the thigh, and the foot is extended on the leg. When the child stands up the foot looks directly forward, but by taking hold of the ankle and moving it, it can be slightly inverted or everted. When in this position she supports herself on the ball of the toes, the heel being elevated upwards of two inches from the floor. The spine, at the lumbar region, inclines a little over toward the affected side, and the iliac crest on that side is somewhat higher than that of the left. The projecting dorsal vertebræ are quite prominent, but free from pain and tenderness. The probability is that the morbid action is suspended, and that a spontaneous cure is taking place.

VI.—PROGNOSIS.

Tuberculosis of the hip-joint is essentially a chronic disease, which, after having endured for an indefinite period, terminates either in recovery or in death. The recovery may be complete, both as it regards the part and system, or, the local action disappearing, the joint may be left weak and anchylosed, and the general health regain its original vigor; or, as not unfrequently happens, particularly after the process of disorganization has commenced, both the articulation and the constitution may remain in a degraded and crippled condition for a long time, or even during the rest of life. No mortuary statistics of this affection have yet been furnished, and it is, therefore, impossible to state, with any degree of precision, the mean duration of fatal cases, or the relative proportion of deaths to recoveries. My opinion, founded upon numerous observations, is, that the mortality from the disease is slight in almost any event, even where there has been palpable neglect in regard to treatment, medical, surgical, and hygienic. In this view, I believe, most writers fully concur. When death does take place, it rarely happens before the eighteenth month, and very often not until after the second year.

Many circumstances, mostly of an individual nature, conspire to influence the prognosis in this disease. So much, in truth, is this the case, that it is utterly impossible to lay down any definite rules for the guidance of the practitioner. Much will, doubtless, depend, in every instance, upon the state of the constitution, the presence or absence of complications, and, above all, upon the duration of the malady. Age also exercises an important influence. It is a well-established fact that, other things being equal, children will live longer, and also stand a much better chance for recovery, than young adults and middle-aged subjects, in whom, especially the latter, the disease often proceeds with extraordinary rapidity, sometimes ending fatally in a few months. When the constitution is naturally feeble, or when it has been rendered so by the intensity of the local suffering, the probability of an unfavorable termination will be much increased. Imperfect alimentation, however induced, is another source of mischief, both as it respects the part and system. Intercurrent maladies, such as typhoid, intermittent, and eruptive fevers, diarrhœa, dysentery, and erysipelas, often retard recovery, or hasten the fatal crisis. These and other diseases, by establishing a drain upon the system, already exhausted by the local suffering, are, I am satisfied, the principal causes of the mortality in strumous affections of the hip-joint. When the malady proves fatal without such intervention, it will generally be found that death is directly due to the depressing effects of tuberculosis of the lungs, lymphatic ganglions, spleen, or peritoneum, which is so liable to show itself under such circumstances.

Much of the mortality of this disease, as well as most of the bad effects, both temporary and permanent, which it entails upon the affected articulation, results from neglect of appropriate management, prior to the commencement of the disorganizing process. Properly treated at its beginning, it is, at least in the majority of cases, as amenable to our remedial agents as any ordinary chronic inflammation, although not generally so promptly. The morbid action gradually receding, the effused materials are by degrees absorbed, and the parts restored to their normal functions. Arrived at its second stage, hardly any course of medication, however judiciously applied, will completely avert permanent rigidity, although life may not be at all in jeopardy. The morbid impression has already advanced too far to admit of easy recession; a certain amount of organic lesion is present, and the patient may congratulate himself if he ever completely regains the use of his hip. In the third stage, when the osseous, cartilaginous, and other structures are disintegrated and broken down; when, perhaps, the interior of the joint is converted into a large chronic abscess; when the lower extremity is shortened and stiffened, and, finally, when the constitution is worn out by pain and hectic irritation; there will not only inevitably be loss of function, but also danger of loss of life. If, under such circumstances, the patient survive, his recovery will be effected at the expense of much suffering, too often eventuating in premature decay and dissolution.

VII.—TREATMENT.

In the treatment of this affection, which, if our notions of its pathology be well founded, is, like scrofulous disease in general, merely a local manifestation of a constitutional vice, topical remedies alone will not avail; to prove efficient and truly useful they must be combined with and aided by means addressed to the general system with a view to the improvement both of the solids and fluids. It would be idle, in the present state of the science, to insist upon a course so palpably proper in itself and so long sanctioned by experience. As well might the practitioner expect to be able to cure consumption, or to ameliorate the condition of a person thus affected by the exclusive employment of counter-irritation and other external measures, as to cure tuberculosis of the hip-joint without the aid of constitutional remedies. Again, in treating this disease it should not be forgotten that it consists of different stages, which, although they run into each other by imperceptible gradations, are nevertheless of vast importance in a practical point of view.

Whatever may have been the duration of the malady when the treatment is commenced, the first and most essential element in the management of every case of the kind is repose, not merely of the limb alone, but also of the body,—repose absolute, unconditional, and persistent. Upon this subject there must be no compromise between the patient and his attendant. The contract entered into at their first interview must be observed with the most scrupulous fidelity,—it must be both binding and permanent. The slightest departure from this injunction would in any stage of the complaint be of great detriment to the patient's limb, while in its more advanced stage, when the bones and cartilages are destroyed and matter exists in the joint, it might seriously jeopard his life. Recumbency must be observed for months upon months. Too much stress cannot be placed upon this point, when it is remembered how important it is to keep parts, comparatively insignificant, perfectly at rest when in a state of suffering. In inflammation of the fingers and toes repose and elevation of the affected structures are instinctively sought, and, if possible, maintained until the morbid action has in a great degree subsided and function been restored. Now, if this be necessary in ordinary inflammation and in textures which have no important uses and sympathies, how much more necessary is it when the malady is of a specific nature and the organ involved is so important as that of the hip-joint? These facts are well known to practitioners, but the common people are ignorant of them, and hence they should always be thoroughly explained to the patient and his friends at the very threshold of the treatment.

In order to render the patient as comfortable as possible, and enable him to endure his protracted confinement without detriment or inconvenience, he must be furnished with a suitable bed provided with slats and a firm but elastic mattress. A common trundle-bed, about four feet in width, will answer every purpose, and is in every respect preferable to the common bed, especially if the patient is a child, as he will thus be less liable, if he should roll out, to hurt himself. The sheet should be well secured at the sides that it may not become rumpled, and the pillow should be of medium size, so that, while it affords adequate support to the head and shoulders, no undue weight may be thrown upon the trunk and pelvis. The confinement, if rigidly insisted upon, will not prove irksome; with the aid of toys and other sources of amusement the little patient will soon,—often, indeed, in a few days,—become reconciled to his new mode of life.

The local remedies must be regulated by the progress of the malady and the constitution of the patient. If the disease be in its first stage, if the pain be violent and frequent in its recurrence, and if the general health remain unimpaired, we can scarcely fail to derive special benefit from the application of leeches, or, in their absence, from the use of a large blister. The leeches should be scattered over the affected joint, and after they have dropped off, the flow of blood should be promoted for some time with cloths wrung out of warm water and frequently renewed. Their number must depend upon circumstances, but in general from six to eight will be sufficient for a child from three to six years of age. Sometimes a blister may be applied advantageously within a few days after the leeching, and I much prefer this mode of counter-irritation to the employment of liniments, embrocations, croton oil, tartar emetic ointment, and iodinized lotions, which is always attended with friction, and for that reason often prejudicial to the inflamed structures. By these means, aided by a plain, simple diet, consisting mainly of farinaceous articles, with milk, weak tea, or milk and water, at breakfast and supper, and an occasional purgative of from two to three grains of blue mass with double that quantity of jalap, most of the cases that are brought under the notice of the practitioner may be radically cured in a few months. If fever be present, or if there be decided plethora, as denoted by the state of the pulse and face, the antimonial and saline mixture may be given in such doses and at such intervals as the nature of the case may seem to require. When the pain is so severe as to interrupt sleep, opiates must be used with warm anodyne poultices or fomentations, or, what I have found to be of greater benefit, a lotion composed of three parts of soap liniment and one of acetated tincture of opium with from half a drachm to a drachm of carbonate of potassa to the ounce, applied by means of a fold of flannel, kept constantly wet, and covered with gutta-percha. Cold applications are generally inadmissible both in this and in the other stages of the disease. Where the skin is unusually dry, or the system more than commonly irritable, the warm bath, carefully administered for half an hour at a time, with a Dover's powder at night, is sometimes highly beneficial, but great care must be used in its administration lest the affected joint sustain injury.

Such is an outline of the treatment which, according to my experience, will usually be found most serviceable in the earlier stages of the complaint. There is, however, not a little diversity in regard to the nature of the internal remedies required in different cases. As already stated, there are two distinct classes of patients, the plethoric and the anæmiac, those with an apparently rich blood and those with an impoverished blood, and hence two very opposite courses of treatment are frequently necessary, the former demanding perhaps a certain amount of depletion, while the latter will be most benefited by tonics. I have not met with any cases where I thought the use of the lancet was indicated, and yet I am not prepared to say whether, when the inflammation and pain are very great, in a strong, robust child, soon after the commencement of the malady, venesection, to a small extent, might not be highly beneficial, tending to retard the suppurative crisis, and to prevent the destruction of the osseous and cartilaginous tissues; in general, however, the remedy would be too harsh, and I am satisfied that the morbid action may be sufficiently repressed by the antimonial and saline mixture, in union with a minute quantity of tincture of aconite, assisted perhaps by the application of a few leeches to the seat of the disease. In the anæmiac, a not uncommon class of cases, tonics and stimulants are often required at the very commencement of the disease, consisting either of quinine and iron, or, what is peculiarly valuable under such circumstances, cod-liver oil, in such doses as shall not prove offensive to the stomach. The diet should of course be of a corresponding character, and the patient should, if possible, be induced to use milk-punch, wine, ale, or porter, in order to rebuild the system, and thus enable the affected parts the more effectually to resist the encroachments of the morbid action.

I am not an advocate, as a general rule, for confining the affected limb in splints, as is the custom of many practitioners, with a view of securing more perfect rest of the joint. The patient himself will usually instinctively take care of this. It is only or chiefly when the limb is much out of shape, or in a position in which, if permanently retained, its usefulness would be seriously impaired, that I have found such a proceeding either necessary or desirable. The restraint occasioned by all such contrivances is generally exceedingly irksome to the child, and is often, I am sure, productive of harm rather than of benefit. When the malposition of the extremity is considerable, the first thing to be done, provided there is as yet no great structural lesion, is to rectify this by extension and counter-extension, aided, if necessary, by rotation and abduction, the patient being under the influence of chloroform, and then to apply a suitable apparatus for maintaining the limb in its new relations. The best material is gutta-percha, undressed sole-leather, or trunk-maker's board, soaked in hot water, and adapted to the hip, thigh, and leg, being kept in place by a common roller. When dry, these articles form an admirable case, which may afterwards be padded with cotton to ward off pressure, and which will thus effectually prevent motion not only of the hip but also of the knee and ankle.

The attempts at rectifying the malposition of the limb are occasionally annoyingly counteracted by the contraction of the principal adductor muscles of the thigh, especially the pectineal and short adductor, which are sometimes so much shortened as to draw the extremity nearly across the sound one. When this is the case, the most expeditious plan is to divide these muscles subcutaneously; and the effect of such an operation upon the future welfare of the part and system is often most striking, the pain and spasm being relieved as if by magic, and the limb becoming perfectly docile and manageable.

In the second stage of the affection, the only reliable local remedy, according to my experience, is a large issue, for the purpose of securing a free and permanent discharge of matter. If the case have not been seen before it has reached this crisis, some of the means already mentioned, as leeching and blistering, may be tried; but, unless they are promptly beneficial, no time should be wasted in their employment. The disease is now thoroughly established, and must be met in the most decisive manner, if we would wish to avoid its disorganizing and destructive consequences. The best place for making the issue is the most prominent part of the swelling, which is usually either directly over the joint or in its immediate vicinity. It is reasonable, *a priori*, to suppose, that the nearer the discharge is established to the diseased structures, the more likely will it be to be useful; and this is precisely what experience has shown to be the fact. The place of election, then, is a circumstance of great importance, and should not be overlooked.

The most eligible form of issue is that made with the actual cautery. The patient being under the influence of an anæsthetic, the iron, heated to whiteness, is gently pressed upon the part until a suitable eschar has been formed; one about the size of a twenty-five cent piece, if the patient be very young, or twice that size, if he be twelve or fifteen years old. The slough, which should not extend beyond the subcutaneous cellular tissue, will generally drop off within the week; and, during this period, as well as afterwards, the parts should be kept constantly covered with a linseed poultice, renewed several times in the twenty-four hours. The discharge, if flagging, may be promoted by savine ointment, by simple cerate containing a few drops of nitric acid to the ounce, or, what I prefer, the occasional application, for a few hours, of a small blister. In this manner I have known an abundant pyogenic discharge maintained for the greater part of a year. The cautery may, if necessary, be reapplied at any time during the progress of the treatment.

I give the hot iron a decided preference, for making an issue in this disease, to all other modes of cauterization, as affording not only a more copious and persistent flow of pus, but, what is of no little importance, making a much stronger, as well as a more permanent, impression upon the part and system. It is impossible always to determine how long the suppurative action should be kept up; but it will be found to be a good rule to let it continue until there is reason to believe that the morbid process, for the relief of which it was instituted, has completely subsided. I have never, in any instance, experienced any bad effects from its protracted continuance; indeed, quite the contrary has been the case. If the discharge becomes offensive, as it often does in warm weather, or where proper attention to cleanliness is not observed, the chlorides will come in play, with a more frequent change of dressings. Occasionally the linseed poultice oppresses by its weight, or it causes painful and itchy eruptions around the sore; when this happens it must be temporarily suspended, or be replaced by some more suitable application.

Independently of the advantages here alluded to, as being afforded by the issue made with the hot iron, there is another of nearly equal, if not, indeed, greater value. I allude to the fact that it may be used most efficiently for the local application of morphia, not so much for inducing sleep, as with a view of allaying the excessive pain of the parts, and the spasmodic jerkings of the muscles of the limb. Employed in this wise it acts, according to my observation, much more promptly and energetically than when administered by the mouth. The quantity necessary to produce the desired effect will, of course, depend upon circumstances; but, in general, from half a grain to a grain will be required for a child three or four years old. Sometimes an injection of laudanum, or an opiate suppository, will allay the pain and quiet the system more effectually than anything else.

In regard to the patient's diet, in this stage of the disease, the same rules should govern us as in the preceding stage; but it should, if possible, be somewhat more restricted, especially if there be much pain, with occasional fever. The bowels should also be maintained in an active condition, the best general purgative being a few grains of blue mass, with a suitable quantity of jalap, or the compound calomel pill. Salines and nauseants will rarely be required. If the patient labors under symptoms of debility, as denoted by the pallor of his countenance, the coldness of the extremities, and the disorder of the digestive organs, tonics, especially quinine and iron, should be employed, along with a more generous diet and nutritious drinks.

In the third stage, characterized by serious structural lesion, and the formation of matter, the treatment will require to be essentially modified, to meet the local and constitutional contingencies. Prior to this period, it was, if not decidedly antiphlogistic, at all events rather of a depressing character, intended to subjugate inflammation and establish resolution; now that the morbid action has gained the ascendency, and exhausted both part and system, a widely different course is demanded.

Two most important indications are presented, in almost every case, at this stage of the complaint. The first is to limit the suppurative process; the second, to promote the speedy absorption of the effused fluid. To fulfill either is generally no easy task; for experience has proved that there are few cases in which our efforts, however skilfully conducted, are crowned with success. When the suppurative process declares itself by well-marked symptoms, as rigors, alternating with flushes of heat, and followed by copious sweats, something may be done to moderate its violence by the steady and energetic use of antiphlogistics; but, in general, it will be found that the patient is either too feeble to justify their employment, or that the disease has been so insidious in its approaches as to defy recognition before the mischief has been completed. It has been seen, however, that matter does not always attend this stage, and that when it does, it often exists only in small quantity. Now it is in the latter class of cases, more particularly, and in those where the suppurative process can be carefully watched from its very inception, that strenuous and persistent efforts should be made to prevent its accumulation, with its concomitant mischief. For this purpose the affected hip should be painted at least twice a day with some sorbefacient lotion, such as equal parts of tincture of iodine and alcohol, or a weak solution of iodine and iodide of potassium, care being taken that, while applying it efficiently, it is not put on so freely as to cause pain or irritation beyond a few minutes. The object should be merely to excite the absorbents, the capillaries being fully kept in abeyance; otherwise injury, not benefit, will be likely to result. Sometimes a large blister answers a good purpose; retained just sufficiently long to produce slight vesication, and repeated every four or five days for several successive weeks. Thorough or protracted vesication is to be avoided, as likely to prove detrimental, from its irritating effects, both upon the part and system. If the disease has not yet advanced too far, if the abscess is still small, and, above all, if the suppurative process be attended with great pain and constitutional disturbance, I know of no remedy so well calculated to fulfill the present indication as the actual cautery, applied in such a manner as to produce a broad but superficial issue. My experience teaches me that, even in this stage of the malady, when everything is apparently most unpromising, more benefit will, in general, accrue from this mode of counter-irritation than from any other with which we are acquainted. It will not only, in many cases, promote the absorption of the pus that is already effused, but materially curtail the suppurative process, and at the same time greatly ameliorate the local distress. If the accumulation be very large, the remedy must, of course, be dispensed with, and artificial evacuation encouraged.

Along with the local remedies just pointed out, should be used certain internal means, to aid and expedite their sorbefacient action. At the head of the list may be placed mercury, especially the iodide and bichloride, administered in small quantities several times a day, and properly guarded by opium, to prevent them from griping and purging; the iodide of potassium and Lugol's solution are also valuable remedies. Ptyalism is of course avoided, and the strength is sustained with tonics, a generous diet, and nutritious drinks.

If these means fail, or if the abscess be already very large when we are called to the case, the matter should be evacuated artificially. I am aware that, upon this subject, there is generally a great deal of repugnance evinced by practitioners, on the supposition that any interference of this kind will only tend to aggravate the local disease, and cause hectic irritation. To such a view, however, I cannot subscribe. On the contrary, I can see no just reason why the general rules of surgery should be departed from in this disease any more than in others. It is well known that matter, wherever and whenever existing in large quantity, invariably does harm; for, not only is it apt to burrow extensively among the surrounding parts, but it must necessarily, by the pressure which it exerts upon the inflamed surfaces with which it is in contact, increase the pain, and effectually prevent the restorative process. That this is the case in regard to extensive purulent collections generally is a fact so well established as to require no argument in its support, and if there be any exceptions respecting such accumulations in the hip-joint I am not aware of them. My conviction is, that practitioners, influenced by the dogmas of the schools rather than by their personal experience and the dictates of common sense, have seriously erred in their treatment of strumous abscess of the ileo-femoral articulation, and been thus directly instrumental in the production of much mischief. In their endeavor to avoid too early an outlet, they have too frequently allowed themselves to wander into the opposite extreme, and neglected to make any opening at all: in other words, in attempting to steer clear of Scylla they have unwittingly rushed into Charybdis. The proper plan, undoubtedly, is, in all cases where the absorption of the matter is no longer a probable event, to promote its escape by the knife. It is the one which I have invariably pursued in all joint diseases for upwards of twenty years, and in no instance have I seen any reason to regret it. In this manner vast suffering is avoided, as well as much structural lesion prevented, as is abundantly shown by the numerous and tortuous sinuses which so frequently form in the hip when the disease is left to pursue its own course. The artificial opening, however, is not to be made heedlessly, or without due attention to the permanent exclusion of the air, which, although in itself innocuous, often proves pernicious, from its tendency, when brought in contact with the pent-up fluids, to favor decomposition, and, consequently, the development of hectic irritation. These effects may generally be prevented by giving the opening a valvular form, as in evacuating chronic abscesses in other situations, by making a puncture rather than an incision, and by closing the orifice, immediately after the operation, with adhesive strips, supported by a light compress and bandage. If the quantity of matter be unusually large, a portion only should be drawn off at a time, the process being repeated in a few days until the whole is removed; but ordinarily the sac may be emptied advantageously at the first operation.

As soon as the fluid has been evacuated, whether partially or completely, a full opiate should be administered, in order to prevent undue reaction; and, if the joint becomes painful, warm anodyne fomentations should be used, until relief is afforded. Afterwards, with a view of moderating suppuration, the parts are painted regularly once a day with some sorbefacient lotion, a linseed poultice or the warm water dressing being used as the permanent application.

If sinuses form, whether as a result of spontaneous or artificial evacuation, the best plan is not to interfere with them, as the pain and loss of blood consequent upon the employment of the knife would more than counterbalance any good effects from the operation. If loose fragments of bone, or pieces of cartilage, present themselves, they should, of course, be promptly extracted.

The violence of the suppurative action having been subdued, the plastic deposits are best dealt with by sorbefacient plasters, applied so as to embrace the whole of the affected surface, and steadily worn for many weeks. Of these plasters, the most useful, for this purpose, is the ammoniac and mercurial, under the influence of which the induration and swelling often disappear with astonishing rapidity. If much pain be present, a suitable quantity of morphia, opium, or cicuta may be incorporated with its ingredients.

During the latter part of this stage tonics and stimulants are usually indicated, and often imperatively demanded, by the exhausted state of the system. The patient, emaciated and anæmiac, must be supported with quinine and iron, cod-liver oil, a generous diet, and nutritious drinks, as milk-punch, wine-whey, ale, or porter. If night-sweats be present, the most suitable remedy will be the aromatic sulphuric acid, either alone or in union with Huxham's tincture of bark. Diarrhœa and pain must be checked with opiates. The patient's apartment should be frequently ventilated, and the surface of the body should be daily washed with tepid salt-water, followed by dry frictions. Exercise in the open air is now generally of much service, and may often be taken by the little patient himself, seated in a go-car, and propelled gently round the yard, or over a smooth road. Carrying him about in the arms is highly objectionable, on account of its tendency to hurt the joint, by pressing the affected limb. In a word, nothing should be omitted that may tend in the slightest degree to invigorate the system and improve the health.

When the extremity of the thigh-bone is necrosed, or so completely carious as to forbid all hope of recovery by time and ordinary means, the soft parts being riddled with sinuses, and the discharge copious and exhausting, excision of the diseased parts will be demanded, and should, if life be not too far exhausted, be promptly executed, as most likely to rescue the patient from impending death. The object of the undertaking, of course, is to remove all the ulcerated structures, and hence the surgeon, after having exposed the joint, should not limit himself merely to the thigh-bone, but perform a similar operation, if necessary, upon the margin and bottom of the acetabulum. The disease being thus arrested, the part and system will be placed in a much better condition for gradual and permanent recovery, provided the shock of the operation is not so severe as to destroy life, either immediately or consecutively. With proper care after the excision, it may even be possible to preserve a certain degree of motion between the contiguous bones. In an interesting and instructive paper on "Excision of the Head of the Femur, and Removal of the Upper Rim of the Acetabulum, for Morbus Coxarius," by Dr. Lewis Sayre, of New York, an analysis of thirty cases, including one by himself, is given, of which twenty recovered, and ten died, four of them within one week after the operation. It would thus appear that excision of this joint is by no means devoid of danger, although the mortality is much less than after amputation of the hip-joint. The statistics of Dr. Sayre have recently been extended by Dr. R. A. Kinloch, of Charleston, South Carolina, with no material variation, however, as to the results. In the case operated upon by himself, death occurred in less than thirty hours from exhaustion.

The operation may be conveniently performed by making a curved incision, from five to six inches in length, perpendicularly over the joint, in a line with the great trochanter, separating the parts, and cutting off the diseased structures with the saw or pliers. If more room be required, the incision may be crucial, or in the form of a T or V. The flaps are afterwards approximated with stitches and plasters, and the immobility of the limb is secured by appropriate splints, pads, and bandages, as in fracture of the thigh-bone.

When the patient has been exhausted by protracted suffering, and life is fast ebbing away, it has been proposed, as a dernier resort, to amputate at the hip-joint; and the records of surgery contain several examples in which the operation has been followed by the most gratifying results. Notwithstanding this, however, I should hesitate before undertaking so grave a procedure, the more especially as the same end may generally be more readily attained by the more simple and less dangerous operation of excision.

ART. II.—*Removal of an Ovarian Tumor, in which the Écraseur was used.* By JOHN L. ATLEE, M.D., of Lancaster, Pa.

On the 29th of January, 1858, I was called to see Mrs. E. E., of this city, in consultation with Dr. James Rodgers. She was then in her sixty-first year; commenced menstruation at seventeen; married at the age of twenty-three, and had never conceived. Her menses continued until the age of fifty-two, with occasional slight intervening leucorrhœa, and had always been more or less painful, and somewhat profuse. On one occasion, about two years after her marriage, she had uterine hemorrhage, which weakened her and kept her confined to bed for a few days. Soon after the cessation of the menses, she had an attack of erysipelatous inflammation of the face; since which time, until the winter of 1856–7, her health had been very good. Her husband died four years ago. Sometime in January or February, 1857, she became troubled with flatulent distension, as she supposed, of the lower portion of the bowels, and a frequent inclination to pass urine, although the quantity discharged was trifling. She had also occasional pain on each side, just above the groins, which resembled the pains of menstruation. On the 5th of August, finding her symptoms increase, she consulted Dr. Rodgers, who, upon examination, discovered a tumor occupying the whole lower portion of the abdomen, with evident fluctuation. A course of diuretic and hydragogue cathartic treatment, combined with mercurials, was instituted, and perseveringly carried out by him, alone, and subsequently in consultation with a highly respectable and experienced physician, with no other effect than to debilitate the patient. The size of the abdomen gradually increased; and on two occasions Dr. Rodgers was of the opinion, from the severity of the pain, that peritoneal inflammation existed in the left iliac region. The patient now complained so much of the discomfort arising from the distension that, on the 17th of December, her physicians removed eight pounds of a highly albuminous fluid by tapping. A tumor of considerable size remained, occupying the left hypogastric, iliac, and lumbar regions. The character of the disease being now understood, all active treatment was suspended, and the patient placed upon a more generous diet. The only medicine given was a mild saline aperient, to regulate the bowels. Four and a half weeks after the first tapping, a similar amount of fluid was drawn off by Dr. Rodgers. Two weeks after this, I was requested to see her. I found the abdomen as large as at the full period of pregnancy. There was evident fluctuation over the whole of the right side of the abdomen, extending to the left hypochondriac and upper portion of the lumbar regions. A very hard tumor occupied the lower portion of the left lumbar and iliac regions, pressure over which occasioned severe pain. Upon examination, per vaginam, I found the neck of the uterus occupying a central position in the pelvis; the left side presenting a tumor without fluctuation. On the right side a tumor could be felt, covering the brim, with evident fluctuation when the tumor was percussed from above. I diagnosed a multilocular tumor of the left ovary. Owing to the great oppression and pain arising from the pressure of the cyst, we tapped her again on the 3d of February, less than three weeks from the last operation, and eight and a half pounds of fluid were removed, containing so much albumen that it coagulated perfectly by heat.

This rapid filling of the cyst had caused great emaciation, and it was evident that unless resort was had to the removal of the cyst she could not long survive. Her pulse ranged from 90 to 100, and, occasionally, was above that; it was small and irritable, and quickened by mental emotion and exercise.

Three days after the last tapping a careful examination of the tumor was made, with reference to the practicability of an operation. The large remaining tumor, now that the abdomen was relaxed, could readily be moved to the opposite side; and inasmuch as the severe local pains, which existed when the abdomen was distended, were immediately relieved after tapping, I had reason to doubt the existence of much previous peritoneal inflammation, and consequent adhesion. After representing fairly and candidly all the dangers of the operation, in the presence of her attending physician and immediate friends, she was left to decide for herself,—my opinion having been given that it was practicable, and would be successful. At all events, should dangerous adhesions exist, the operation would be abandoned, and the wound closed; as had occurred to me in a previous case, with a favorable result. After various delays, and another tapping on the 3d of March, at which ten pounds of albuminous fluid were removed, she finally demanded the operation; being sensible, from the rapidity of the filling of the cyst, and her increasing debility and emaciation, that it could no longer be delayed. The day previous the bowels were freely evacuated, the patient restricted to cold water, and in the evening twenty drops of elixir of opium administered, to keep the bowels quiet. At midnight she took a second dose. Thirty drops were given on the following morning, the 23d of March, on which day, at noon, I proceeded to the operation, in the presence of Drs. Rodgers, Parker, Parry, Ehler, M. M. Nithens, and John L. Atlee, Jr., and Messrs. Weiger, Brensman, and Frick, medical students. The temperature of the room had been elevated to 80° F., and it was steadily maintained at that for several subsequent days. The bladder having been evacuated before placing her on the table, she was put under the influence of ether and chloroform, and an incision was made through the skin, cellular and adipose tissues, to the fascia, from one inch below the umbilicus to two inches above the pubis. The fascia and peritoneum were then successively divided upon the director to the extent of the external wound. The large cyst was now exposed, occupying the upper, lower, and right side of the abdomen, presenting, on its left aspect, a deep sulcus between it and a second cyst, which filled a large portion of the left lumbar and iliac regions. The hand was then introduced, and the adhesions caused by the previous tappings separated, as were also a few between the right abdominal wall and the cyst. It was then swept across the fundus of the cyst, and passed down between it and the omentum, so as to detach it in the few places where slight adhesions existed. Trochars were now introduced, and both cysts rapidly evacuated, the smaller one containing about four pounds of a straw-colored and less viscid fluid. Several smaller cysts, two or three times as large as the fist, were developed in the base of the tumor, rendering an enlargement of the wound, one inch at each extremity, necessary, before it could be drawn out. No other adhesions were found, except at the pedicle. The tumor, in its development, had deviated from the usual course. It had expanded the broad ligament, and encroached upon that portion of the peritoneum existing between it and the colon, so as to leave the pedicle but one inch long, four inches broad, and highly vascular, for the application of the ligature. In conversation with my brother, Dr. Washington L. Atlee, in February last, he had recommended the "écraseur" for severing the pedicle, and, as I had seen at least one fatal result from the application of the silk ligature to the pedicle too near to the colon, and as the use of the silver ligature of Dr. Sims, although less irritating than silk, would leave the proximal portion of the pedicle a sloughing, irritating mass within the abdomen, I determined to use the écraseur. The whole tumor being firmly drawn up and held steadily by my son, I surrounded the pedicle with the forefinger and thumb of the left hand, and grasped it very firmly. The chain of the instrument was now passed round it above the hand and very close to the tumor, and moderately tightened. By maintaining this position of the left hand very firmly—the screw of the instrument being held by an assistant—I was enabled to operate upon the lever with the right, and to prevent the colon from being drawn toward the chain. The lever was turned for half a minute, then stopped for half a minute, and so alternately until the pedicle was severed, occupying six and a half minutes. (The colon had entirely escaped, with a margin of peritoneum one inch wide.) The torn surface of the pedicle was then carefully sponged and examined; the abdomen was kept closed for several minutes, and no hemorrhage, nor even oozing of blood from it, could be detected. The fluid which had escaped from the cysts was then sponged out, and the external wound closed by four silver sutures (kindly sent to me by Dr. J. Marion Sims) and adhesive strips, supported by a compress and flannel bandage. During the whole operation the patient suffered but little pain; her pulse, which was 90 at the commencement, remained so when she was put to bed; the only variation was at one period, when, for a few moments, it became sensibly weaker, and a slight paleness overspread her countenance. There was no nausea or vomiting then, nor at any subsequent period. The whole weight of the mass—solid and fluid contents—was seventeen and a half pounds. Three hours after the operation the patient complained of a *screwing* pain low down in the left side, and occasionally a shooting pain in the same region. Pulse 86, and slightly intermittent; nose cold; skin of arms and hands warm, and a little moist. Has taken nothing but ice and iced water; at two o'clock she took thirty drops of the elixir of opium, having taken thirty when put to bed at half-past twelve o'clock.

5 o'clock, P.M. Patient complains of a strong inclination to pass water. Introduced catheter, and drew off sixteen ounces of straw-colored urine with acid reaction,—more, she says, than she had passed altogether during the previous week. Pulse 92, intermitting every eight or ten strokes; has less pain in left side; more in her back; slept nearly an hour; nose quite warm, as is the whole surface, with more fulness and quickness of the pulse; reaction evidently commencing.

7 o'clock, P.M. Patient now entirely free from pain; pulse 96; skin a little hotter than natural.

9½ o'clock, P.M. Patient quite free from pain; skin very moist; heat natural, except of palms, which are hot; catheter removed six ounces of urine; thirst considerable; at 8 o'clock took 25 drops elix. opii.; pulse 102; sleeps at intervals. Since the operation she has been more or less troubled with flatulence without pain.

Wednesday, March 24th, 8 o'clock, A.M. The report this morning is highly favorable; the patient smiled when I entered the room, and says she feels very well; she slumbered nearly all night, waking at intervals and asking for drink; she has no pain, and the only complaint she makes is that the wind is *rumbling* in her bowels; pulse 84, soft, and has lost its quickness; skin, including palms and soles, perfectly natural; perspired all night. It appears as if the reaction, which commenced at 5 o'clock yesterday, has entirely subsided, and left her with a better pulse than I have known her to have since I commenced my attendance upon her. Removed by the catheter eight ounces of urine; mind calm, clear, and hopeful; she completed her sixty-first year on the 8th inst.

12½ o'clock, P.M. Patient in all respects the same, except pulse, which is 90; to continue cold water and ice, *pro re nata.*

7½ o'clock, P.M. Patient still lively and comfortable; pressure on the abdomen in the left iliac region gives some pain, or feeling of soreness; has passed wind from the bowels this afternoon; bladder troublesome; removed, by the catheter, ten ounces of urine, of normal color and acid reaction; pulse 79. The intermission in the pulse, remarked yesterday, passed off during the night, and the action of the heart has been perfectly regular all day; tongue clear, skin moist, and of natural temperature; to have 25 drops elix. opii.; allowed thin arrow-root gruel during the night.

From this time until the 27th of March, 5th day, no unfavorable symptoms were manifested; the patient, on the contrary, steadily improving; examined the wound, and found it united throughout the whole extent, the lint covering it as clear as when first applied. There had been no serious discharge from the abdomen, as in all my other cases where the ligature was removed; no trace of inflammation around the silver sutures, which were removed on the 7th day; on this day she sat up for the first time out of bed.

From this time my patient sat up daily; on the 9th day the bowels were moved, for the first time, by a dose of castor oil; the discharges consistent and natural; she had been gradually allowed a more generous diet, and was increasing in strength.

On the following Monday, the 14th day, she rode with me half a mile, to my office, to see the tumor, and since then she has remained perfectly well.

This case is the eighth on which I have operated for the removal of enlarged ovaria, in two of which both the ovaria were diseased and removed, one only proving fatal, the patient dying on the 12th day. In all the previous cases I could perceive the disturbing effect of the presence of the silk ligature around the pedicle, as well as of those used to restrain hemorrhage, and until they came away they were more or less a source of anxiety both to the patients and to myself. With the écraseur to sever the pedicle, and the use of the silver suture and silver ligature, where ligatures are necessary, I am satisfied that a very large share of the dangers attending the operation will be obviated. Mrs. E. is the oldest patient upon whom, I believe, the operation has been performed,—Dr. Clay, of Manchester, England, reports his two oldest at 57 and 58; she was excessively reduced by the frequent tapping and refilling of the cyst, as well as by the previous very active medical treatment to remove the dropsy, and yet she recovered more rapidly and with much less constitutional disturbance than any other patient upon whom I have ever performed a capital operation. This I attribute very much to the use of the écraseur and the absence of any ligature involving the peritoneum.

ART. III.—*Experiments in Reference to Section II. of a Paper in the "May Number of the Review," entitled "The Perceptive Power of the Spinal Cord."* By GEORGE R. PATON, M.D., of Galt, Canada West.

Experiment 4, April 26th, 1858.—I divided the spinal cord of a frog immediately behind the skull, and passing an instrument into the encephalon, removed every portion of nervous matter anterior to the division of the cord. Respiration ceased.

I then placed the frog in a vessel containing a little water, submerging it till about two-thirds of its body were covered, but not allowing the water to come in contact with the divided portion of the spine; then permitting it to remain quiescent for a considerable time, till the effects of the operation had subsided, I applied irritation, and observed the phenomena.

I touched with the point of a needle the integuments of its right lumbar region, and it raised up its right hind foot and passed its toes over the part. I irritated in a similar manner the left lumbar region, and it passed the toes of its left hind foot over the part. I irritated the integuments of its right shoulder, and it raised up its right hind leg and passed its toes over the part; on irritating the integuments of its left shoulder, a similar movement was performed with its left hind foot. I then touched with the point of a needle the integuments of its right fore leg, and it withdrew it. I continued the irritation, and it moved forward its right hind leg and passed its toes distinctly over the part. It performed a similar movement with its left hind foot, on its left fore leg being irritated. On compressing the toes of its left hind foot, it made strong efforts to be relieved, and threw itself upon its back. On being replaced upon its face, I continued the irritation, with similar results. But the frog always required to rest a little before the irritation was renewed, that the movements might be distinctly manifested.

Experiment 5, April 28th, 1858.—I divided the spinal cord of a frog immediately behind the cranium, and removed every portion of the encephalon anterior to this. Respiration instantly ceased.

I then placed the frog, as in the preceding experiment, in a little water in a vessel, and allowed it to remain at rest for a considerable time, till the effects of the operation had subsided.

I touched with the point of a needle the integuments of the right side of its abdomen, and it raised up its right hind leg and scratched the part with its foot. I irritated the integuments of its right dorsal region, and it scratched the part with its right hind foot. I touched with the point of a needle the integuments of its left cervical region immediately below the division of the cord, and retained the needle on the part, and it raised up its left hind foot and pushed away the instrument with force. I placed the point of a needle on the integuments of its right cervical region, and it raised up its right hind leg and pushed away the needle with its foot. I retained the point of the needle on the integuments of its left dorsal region, and it raised up its left hind leg and pushed its foot against the needle. On the needle being removed, it scratched the part with its foot. It was completely insensible to every irritation of the integuments of its head, till we touched the part below the division of the cord, and then it raised up its hind foot and pushed away the needle, and scratched the part with its toes. I have also observed it raise up its hind foot and scratch the part that had been irritated, a short time after the needle had been removed.

On being placed upon its back, it was unable to turn upon its face. When its foot was compressed it struggled to be relieved, and gave the most distinct evidence of sensation and perception of the stimulus.

ART. IV.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, April 14th, 1858.

The President, DR. GROSS, in the chair.

Abscess of the Ovary Communicating with the Sigmoid Flexure of the Colon.—DR. STILLÉ exhibited a specimen of ovarian abscess, for which he was indebted to Dr. Bell. The abscess had evidently discharged into the colon; an opening was found on the side of the ovary, and a corresponding opening in the sigmoid flexure. The communication was fistulous, and appeared to be of long standing. The peritoneum showed signs of inflammation; the liver was rather larger than normal, and fatty; there was no tubercular disease of the mesenteric glands; the bronchial glands were enlarged, and apparently filled with a deposit. No history of the case could be procured.

DR. GROSS spoke of the comparative rarity of ovarian abscesses. He also mentioned that a physician of this city had reported a case of an abscess of the ovary containing a gallon of pus.

DR. HARRIS had seen a case of supposed ovarian dropsy tapped, in which, doubtlessly, an abscess of the ovary had existed. About two gallons of an extremely offensive pus were drawn off.

DR. DARRACH believed that ovarian cysts might contain an extremely offensive fluid resembling pus, yet it would be hardly right to call such formations abscesses. He cited two cases to prove his assertion. In one, the ovarian cyst filled the whole abdomen, and was mistaken for ascites, on account of the existence of a tympanitic sound above the line of effusion, resulting from the elimination of gases within the cyst; the fluid evacuated was extremely offensive. In the second case, the cyst also contained a purulent fluid. In both, the walls were lined by a dense, flaky layer of lymph.

DR. AGNEW accounted for the fact that the abscess communicated with the intestine at the sigmoid flexure, by supposing that the latter must have been displaced by fæces, which it often is in women. He had frequently, in the dissecting room, met with ovarian cysts, but never with abscesses.

Dr. Stillé would not positively affirm that the specimen before the Society was an abscess. The walls were rough, and the appearances were those of an abscess; yet it might have been a cyst.

Isolated Fibrous Tumor from the Mammary Gland.—Dr. Packard, in presenting this specimen, made the following remarks:—This tumor was given to me by my friend Dr. Turnbull, who removed it about two weeks ago from the breast of an unmarried lady, aged twenty-one. It had been growing a little over three years, was freely movable, and projected somewhat above the level of the skin at the upper part of the gland. The patient thought she could trace it to an injury. Her menstrual functions were very slightly, if at all deranged. When the mass was removed, a small pedicle was observed connecting it with the adjoining gland-tissue.

Under the microscope there were seen a vast number of free nuclei, some oval, and others very much elongated and even curved. Many well-characterized fibro-plastic cells were also present, and very delicate fibrous tissue in large quantity. Acetic acid had little or no effect on these structures.

The diagnosis, before the removal of this tumor, was, that it belonged to the class described by Velpeau as *adenoid.* Sir Astley Cooper's *chronic mammary* tumors, and Cruveilhier's *fibrous,* are identical with these; Nélaton follows Lebert, whom he quotes freely, in calling them *partial hypertrophies* of the gland. Lebert's account of their structure is very full: he says they present no other elements than those of the gland, and they may affect either the fibrous tissue or the proper gland-structure. In the former case, he states, they have a fibro-gelatinous appearance, and are the only kind of fibrous tumor to which the breast is liable. He also mentions that they have a cellular envelope, and are easily enucleated, but that their independence of the surrounding tissues is only apparent; a pedicle being generally traceable. The existence of this pedicle is denied by Velpeau.

The cells of the present growth had, to my eye, very much the appearance of ordinary fibro-plastic cells, while the conversion of nuclei into fibres was traceable with admirable distinctness.

Meningitis of the Convex Surface of the Brain; Tubercular Deposit in the Lungs.—Dr. Morton exhibited a brain removed from T. D——, aged thirty, who was admitted into the Pennsylvania Hospital on the 3d of April, 1858. He was dull and stupid when he came into the hospital, but stated that he had been sick for two weeks with constant headache, and had bled much from the nose. He presented no marked symptoms, except dullness of mind, trifling cough, and a slight amount of paralysis of the lower limbs. He was, however, very weak. His condition remained the same, with the exception of his mind becoming duller, until the 9th, when he had a violent chill, followed by a convulsion which lasted about an hour, and left him perfectly comatose. His pulse now rose; his urine passed involuntarily from him; difficulty in swallowing became a marked symptom, and he continued to sink until the 11th, when he died. The treatment consisted in cold water to the head, blisters and dry cups to the neck, purging, small doses of mercury, varied with stimulants and supporting remedies.

Post-mortem examination.—The lungs were somewhat congested, and contained patches of infiltrated tubercle. In the heart were large fibrinous clots, the largest occupied the left auricle and ventricle. The stomach and intestines were congested; the cœcum was especially so; the liver, kidneys, and spleen were healthy; the brain showed evidences of recent inflammation; large patches of lymph were deposited on its superior and its anterior surfaces. The same patches were found in the fissure of Sylvius. Under the dura mater, in the course of the longitudinal sinus, at the upper and posterior portion of the brain, some degenerate lymph and pus were met with. The dura mater itself was, here and there, along the course of the longitudinal sinus, firmly attached by the recent inflammation; bands could be distinctly seen when the membrane was lifted up. Some slight softening existed here, but none at other portions of the brain.

DR. STILLÉ commented on the interest of the case, which arose mainly from its being one of simple, non-tubercular meningitis, associated with tubercle of the lung. This is certainly rare, although by no means unprecedented. In what way the tubercular diathesis predisposes to meningitis it is difficult to say; yet that it does so appeared to him unquestionable. But in these cases we find, for the most part, small, granular, tubercular deposits along the base of the brain. No deposits of this nature, we are positively assured, could be found here by the most careful examination. We are, therefore, obliged to assume it to have been simple meningitis. Even some of the symptoms, such as the depression resembling that of typhoid fever, would seem to point to tubercular meningitis, yet the anatomical characters were not those of this affection.

DR. DA COSTA inquired if any effusion in the ventricles had been observed?

DR. MORTON. None.

DR. DA COSTA believed that this would tend to confirm the fact of its not being a case of tubercular meningitis. In this affection post-mortem examination almost invariably shows the presence of fluid in the ventricles, and, for the most part, in large quantities. The fluid is usually transparent and thin, but sometimes thick and creamy. It distends the ventricles and leads to softening of the surrounding tissue. Hence the softening in such cases is merely that from imbibition. The microscope bears this out; it reveals no evidences of inflammatory action.

Case of Syphilitic Retinitis.—DR. ADDINELL HEWSON read the history of a case of retinitis which he had considered syphilitic in its character, from its history and from the resemblance of the exudation on the retina to the condylomata of syphilitic iritis. He thought the case of some interest at the time he first saw it, and was not then aware of the fact of any similar ones having been observed. Recently, however, some cases of this very disease have been quoted in the various journals, as observed by Mr. Critchett, at the Royal Ophthalmic Hospital, Moorfield, London. As these have attracted a good deal of interest by showing the important *rôle* the ophthalmoscope is likely to assume in diagnosis, Dr. Hewson thought some details of the case which had come under his notice might be acceptable to the Society, and therefore read the following memoranda taken at the time, November 20th, 1858:—

Wm. M. Smith, aged thirty-one years, born in this country, a stout, hearty-looking man, with light hair and beard, and blue eyes, now weighs 190 lbs., but between two and three years ago his weight was as much as 234 lbs. At that time he contracted *primary syphilis*, for which he took some internal remedies, but does not know of what nature. Since then he has lost flesh, and his appetite has failed him. At one time his hair fell out in great quantities, and recently (within the last six months) he has had some sores on his skin, and has once in a while suffered with pains in his back and loins. He now complains of marked dimness of vision in the left eye, and says the right eye has also begun to fail him. He does not think there is any difference in his sight at any particular time of the day. He first discovered the defect in the vision of his left eye eighteen months ago. This discovery was made accidentally by his getting some dust in the right eye. He remembers, however, having had violent pain in his left temple some time previous to this accident. After this casualty he sought advice for his left eye, and was treated with blue mass, but this was not continued sufficiently long to affect his gums. The sight did not improve under this treatment. It now seems worse at times, and is perceptibly influenced by the condition of his digestive organs.

He first noticed his right eye being affected two weeks ago; since then he has had constant pain in the right temple. His appetite is now good, and he has recovered from his baldness. There is no apparent disease in either eye—no signs of his ever having had iritis, or any form of ophthalmia. With the ophthalmoscope, the lens and vitreous humor of the left eye are seen to be perfectly clear; the retina, however, appears to have a dirty tint, and to be defective in translucency; its surface is sprinkled all over with little points of a white, or a yellowish-white substance, and this effused substance in many places has quite a globular form, and resembles, in a very marked degree, the condylomata of syphilitic iritis; some of these masses have a reddish tint. The optic nerve in this eye has a dirty-red hue; the vessels of the retina are somewhat varicose. In the right eye the retina is seen to be more acutely inflamed; the optic nerve redder than natural, and the vessels of the retina, as they emerge from the nerve, abnormally large and tortuous; the tint of the retina is more dusky than is usually seen in acute retinitis.

I pronounced this case one of syphilitic retinitis, which had become chronic in the left eye; ordered Hyd. protiod, gr. $\frac{1}{4}$ t.d.; milk diet; rest; local depletion and counter-irritation. He improved for a time under this treatment, and was placed on the iodide of potassium. He was considerably benefited by this drug, which he took alternately with the protiodide of mercury. Whenever the gums and breath became affected by the mercury it was discontinued, and the potash taken in its stead.

Early in March his right eye appeared perfectly well, but no improvement was manifest in the left. About this time he exposed himself, when in the interior of the State, attending to some business, and became rapidly worse—almost blind in the better eye. The mercury was resumed, and, as soon as the acute symptoms had subsided, he again visited the city and consulted me. This was on the 19th of March, and I made the following note of this case at that time:—

March 19.—Wm. Smith visited me to-day; has improved much in health and appearance; says he weighed, two weeks ago, 200 lbs., but has lost since then; weighs now 195; has been suffering for two weeks with pain in both temples; sight is the same as when here on New Year's, but has been seeing, during the last two weeks, white stars,—these only occasionally; no external appearance of disease in the eyes; pupils natural; iris of right eye perhaps lighter in color; has been taking medicine up to the last two weeks; has had no flashes of light as he experienced after he was first attacked.

Dr. H. then ordered him the Zittmann's decoction; dysentery, however, supervened on the use of this, and his physician in the country was obliged to go back to the first plan of treatment. When Dr. H. last heard of this patient he was better, but not well.

Report of Committee.—The Committee appointed to examine the brain removed from a diabetic patient would respectfully report, that they carefully examined the organ, but found no portion which might fairly be considered as diseased. There appeared to be some softening in the immediate neighborhood of the fornix, yet this was a mere appearance, not borne out by a microscopical examination. The brain was very much engorged, and its tunics injected.

Signed DRS. PACKARD, HUMPHREYS, DA COSTA.

WEDNESDAY EVENING, April 28th, 1858.

The President, DR. GROSS, in the Chair.

Cirrhosis of the Liver; Diabetes.—DR. MORTON exhibited a specimen of cirrhosis of the liver, which was taken from a man aged thirty-eight, of short stature, thin, and dark-haired, who was admitted into the Pennsylvania Hospital on March 22d, 1858, for diabetes.

The account he gave of himself was, that with the exception of six or eight attacks of erysipelas of the right leg, he had been perfectly well until eight weeks before he entered the Hospital. At that time he was seized with another attack of erysipelas, and a severe cold followed; since which he had been confined to his bed. He stated that for a long time he had frequent calls to pass his water, and that he was obliged to rise five or six times during the night; his bowels were generally constipated; his tongue and skin, he had noticed, were always quite dry. For a long period he had been in the habit of carrying sugar in his pockets, and eating it while at work, so great was his desire for it; this habit had increased upon him of late. At the time of his admission he passed from seven to eight pints of urine daily, loaded with sugar, high-colored, and of a specific gravity averaging about 1038. His belly commenced to swell eight or ten days before he was admitted into the Hospital. The swelling had lately much increased, and he presented considerable œdema of the limbs and ascites, measuring thirty-eight inches around the belly. He became exceedingly debilitated and anæmic, and although he was placed upon a tonic plan of treatment, with rennet and nutritive diet, he improved but for a short period; he soon relapsed into his former weak condition, and his skin and tongue became again very dry. About the 12th of March he was seized with another attack of erysipelas in the leg, accompanied by diarrhœa; drowsiness supervened, followed by complete coma, and he died with symptoms of effusion in the brain, on April 16th, twenty-four days after admission, and eleven weeks after he first complained of being sick.

Post-mortem examination.—The lungs and heart were healthy; the liver cirrhosed, but of normal size; spleen, normal; kidneys, large, congested, and flabby; brain, pale; about two ounces of effusion were met with under the arachnoid. The abdominal cavity contained about 2½ gallons of serum, which, when tested for sugar, gave evidence of the presence of a considerable quantity of this substance. The brain was examined for sugar, but not a trace of it could be detected. The blood from the ascending vena cava was also tested for sugar, but none was found.

DR. DA COSTA made some remarks with reference to the different organs which evince signs of disease in diabetes. The kidneys are sometims normal, but he had in several post-mortem examinations observed them to be larger than in health, and containing a much greater quantity of fat. The cells lining the tubules are filled with this substance, and the walls of the Malpighian corpuscles are full of oil-granules. Dr. Da Costa also directed attention to the circumstance that in most of the cases of diabetes presented to the Society, disease of the liver had existed.

DR. FORBES had met with disease of the liver in three post-mortem examinations made on diabetic patients. He also spoke of an interesting case of diabetes, which followed an injury. A patient, a negro, was brought into the Pennsylvania Hospital with a compound fracture of the leg. Diabetes made its appearance within a week, and he died of the disease in the thirteenth week after his admission.

Tubercle in the Lungs and in the Mesenteric Glands.—DR. MOREHOUSE exhibited two specimens of tubercle, one affecting lymphatic glands, the other the pulmonary tissue. In the first case disease had existed for more than three years. The glands of the neck had inflamed, softened, and opened, as is ordinarily seen in scrofula. This was followed by gradual emaciation, enlargement of the liver, and repeated discharges of blood from the bowels, which continued during the last ten months of the child's life. After death the mesenteric glands were found to be enlarged; so were the bronchial glands. The lungs were not the seat of deposit. The lower lobe of one of the lungs was in a state of inflammation. The heart was filled with firm heart clots, surrounded by a soft gelatinous mass soluble in water. The liver was greatly enlarged, and studding its surface were numerous subperitoneal deposits. Similar deposits were found on the spleen and pancreas, and on the inner surface of the abdominal walls. The microscopical appearances of the deposit in the different glands were those of yellow tubercle with a preponderance of granular matter.

In the second case the lungs were infiltrated with gray tubercle. A cavity had formed in one of them. The child, aged eleven months, died in convulsions. The ventricles were filled with fluid; their lining membrane was softened.

Dr. Morehouse believed that the first form, or yellow tubercle, affected more especially the lymphatic glands, and might be considered as a separate variety and as associated with the scrofulous diathesis.

Dr. Stillé would not deny that tubercular matter was frequently deposited in lymphatic glands, but he did not think that this could be viewed as a separate form of tubercle. Nor could he regard it as identical with scrofula. For this disease, although chemically and in its minute structure not different from tubercle, was yet very dissimilar in its exact clinical and pathological bearings, and a distinction, therefore, between the two is being now more generally admitted.

Several other members maintained similar views and spoke against Dr. Morehouse's proposition.

Cyst over the Nasal Bones containing Gelatinous Matter.—Dr. Gross exhibited a cyst removed from Albert B. M., aged eighteen years, who presented himself at the Jefferson College Clinic, on account of a tumor which had existed for sixteen years over the nasal bones between the inner canthus of the left eye and the glabella. Upon removal, the tumor, which was about the size of a marble, was found to contain a small quantity of softened sebaceous matter, and about one drachm of a greasy, light, amber-colored fluid, resembling in every respect fine olive-oil. This, upon standing a few moments, became of the consistence of lard. The cyst was opaque and thickened, and granular on its inner surface. Microscopically, the fluid was found to consist of fat globules and numerous non-nucleated corpuscles, such as are seen in the gelatinous matter taken from the thyroid gland.

Astragalus discharged through an opening in the Foot.—Dr. Hutchinson presented, through the Secretary, an astragalus removed from the left foot of Josiah Morgan, aged eleven years, of Butler, Luzerne County, in this State, by Dr. Peace, at the Pennsylvania Hospital, on the 17th of March.

The patient states that, about the middle of last August, he was thrown from a hay-mow by another boy, but not feeling much hurt he continued to use his foot for some days afterwards. During this time he caught his foot in a rut and twisted it slightly; he is unable to say positively to which accident he owes his present condition. A few days after the latter occurrence his foot became too painful to be used. There was no external wound at this period; an opening formed, however, a short time subsequently. Several small pieces of bone were discharged before his admission into the Pennsylvania Hospital, and the remainder, constituting the entire astragalus, was removed without difficulty.

When the case was first seen, a short time after admission, there existed in front of the external malleolus a large opening into which the little finger could readily be passed. This has now healed, leaving only a small orifice, through which carious bone may be felt. Another and similar orifice existed lower down, over the os calcis.

The principal shortening took place in the length of the foot, it being now three-quarters of an inch shorter than the other; not more than one-quarter of an inch difference can be detected in the length of the legs.

The foot had a tendency to turn inward, which has been corrected by a pasteboard splint moulded to the part. The foot is very nearly at the proper angle with the leg, and some motion exists at the joint.

WEDNESDAY EVENING, May 12th, 1858.

The President, DR. GROSS, in the chair.

Cases of Chronic Rheumatic Arthritis.—DR. BRINTON exhibited two shoulder joints which had been removed from a subject in his dissecting room. These specimens presented appearances such as would lead to the belief that, during life, the individual had suffered from chronic rheumatic arthritis.

Examination of left shoulder.—The upper and outer portion of the capsular ligament had been entirely destroyed. The tendon of the biceps muscle had been absorbed; the tendons of the supra and infra-spinatus, and also that of the teres minor, had become separated from their attachments to the tuberosities of the humerus; and that of the last-named muscle was completely torn into shreds. The synovial membrane of the interior of the joint was thickened and presented a villous fimbriated appearance. In consequence of the destruction of that portion of the capsular ligament which arises from the upper part of the glenoid cavity of the scapula, a spontaneous luxation of the humerus directly upwards had occurred; the head of the bone resting against the under surface of the coraco-acromial arch. The articular cartilage of the humerus in some points appeared thin and soft; at others, and especially upon the outer and upper portion, eburnation had commenced, as also upon the under surface of the acromion process.

Right shoulder.—In this preparation, which had been cleaned, the same appearances of eburnation were presented, and destruction of the capsule and upward dislocation had also occurred. Dr. Brinton stated that some time since an opportunity had been afforded him of examining upon the living patient the interior of a shoulder-joint similarly affected. The patient, aged twenty-three, had suffered from repeated attacks of chronic rheumatism. Some months subsequent to his last attack a tumor developed itself slowly in the region of the supra-spinatus fossa of the left shoulder, producing pain, and interfering with the utility of the limb.

Under the impression that the tumor was of a fatty nature, an incision was made over it; when about two ounces of dark, thick, oleaginous fluid escaped. The supra-spinatus muscle was found completely destroyed, having undergone fatty degeneration; its tendon was separated from its belly, and had formed attachments to the bone. The finger could be carried under the acromial arch into the cavity of the articulation, where the capsule appeared to be destroyed externally and superiorly, and the head of the humerus seemed rugged and uneven. The degenerated supra-spinatus muscle was scraped away with the handle of a knife, and the wound closed by sutures. Union by first intention ensued except at one point, where a synovial fistula existed for some weeks, but eventually healed up.

The patient recovered the use of his arm and was able to resume his work, but died of a cardiac affection some months afterwards. Dr. Brinton stated that he regarded this case also as a well-marked instance of the rheumatic arthritis so ably described by Mr. Smith and Dr. Adams, of Dublin.

Dr. Brinton also directed the attention of the Society to a specimen of remarkable *disease of the knee-joint.* The patient was a negro wood-sawyer of advanced age, but the exact history of the case could not be obtained. The joint exhibited presented the following appearances:—The crucial ligaments had been destroyed, as also the semilunar cartilages and coronary ligaments. The external condyle of the tibia had been absorbed and a new articulating surface formed at the expense of the side of the tibia and the head of the fibula; this latter was flattened out and incrusted with bony deposits. The adventitious cavity thus formed, as well as the condyle of the femur, had become completely eburnated, and presented surfaces of extreme polish and hardness. In the new condyloid cavity was found a large mass of bone attached by a ligamentous pedicle to the external ligaments. This mass was about an inch and a quarter in diameter, of rough and irregular shape, although at certain points polished by attrition. As long as this body rested beneath the external condyle of the femur, and between it and the bottom of the new articulating cavity, it was evident that the patient could walk with the leg nearly in its normal relative position to the thigh. When, however, the mass of bone slipped away from beneath the femur, as frequently had happened during life, a spontaneous dislocation of both bones of the leg occurred, the leg then forming with the thigh an angle of about 135°. Two or three free cartilages, or rather osseous masses, were found loose in the joint. The synovial membrane had been entirely destroyed. The external ligaments had lost their distinctive character; the whole articulation being surrounded by a species of dense capsular ligament. Fracture of the patella had also occurred; the upper fragment had been displaced laterally, and the union was imperfect. As to the origin of this strange condition of the joint, Dr. Brinton could not speak with certainty; but he was inclined to look upon it as the result of chronic inflammation, perhaps following injury.

DR. HEWSON was able to add some facts concerning the history of this patient. The man had earned at times his living by cutting grass, and had been thus occasionally employed by Dr. Hewson's father. Dr. Hewson could state positively that he had suffered much from chronic articular rheumatism. He also remembers distinctly that fourteen or fifteen years ago he met with an accident to his leg, probably a fracture, after which his lameness was much increased, and that at times this man walked more erect than at others.

Constriction of the Mitral Valve; Single Kidney.—DR. MORTON exhibited a diseased heart and a fused kidney removed from a patient who was admitted into the Pennsylvania Hospital on May 3d, 1858, about 6½ P.M. The only account which could be gained of the case was that the man was found in an insensible condition in one of our small streets. On examining him, it was soon perceived that he was in a violent convulsion,—skin cold, eyes staring, great muscular rigidity, and the pulse scarcely perceptible. He was immediately placed in a hot bath, 110° F., and carbonate of ammonia and brandy were given to him and were readily swallowed. Thinking that possibly some poison had been taken, the stomach-pump was introduced and the viscus washed out; but there was no evidence of any foreign substance. He continued to sink, his pulse sometimes rising and then falling, until 1½ A.M., May 4th, when he died, exactly seven hours after admission.

Post-mortem examination twelve hours after death.

Lungs, healthy. Heart, valves healthy, with the exception of the mitral, which was much thickened, and so contracted that it would not admit the little finger; large fibrinous clots occupied all the cavities. Liver, large and fatty. Kidneys, presented the following anomaly: the two kidneys were merged into one, which was placed near the third lumbar vertebra, and so situated, in relation to the spine, that about four-fifths of the organ were on the left side, and the remaining portion on the right. That part of the kidney which lapped over the bodies of the vertebræ was much thinner than the main body. The organ has an irregular kidney shape; on the back surface of the gland the parenchyma is deficient in two places, one near the right, the other near its left extremity.

The cavity at the left, which is connected with the main body of the kidney, measures about an inch and a quarter in length, and three-fourths of an inch in breadth; the right cavity is about three times the size of the left, and is of an irregular, quadrilateral shape, and much more superficial than the other. These two cavities contain the pelves of the kidney. The right portion of the kidney sends six calices to the pelves; the left pelvis is pyriform in shape; there is no communication between the two pelves. One artery supplied the organ, sending two branches to the left and one to the right side. The kidney measures six and three quarters of an inch in length, four and a quarter in breadth, two and three-quarters above the contracted portion. The left ureter is twelve and a half inches, and the right ten inches long. On leaving the kidney, they pass down on the right side of the spine, and enter the bladder at the usual places. The organ weighs nine and a half ounces; in consistence it is healthy.

The Brain weighed sixty-three ounces. It was quite soft, and easily broken down when pressed with the finger. In many places it presented the appearance of chronic congestion, particularly on the right side, and nearest the cerebellum. The membranes (arachnoid and pia mater) were much thickened, opaque, and filled with serum; about eight ounces of which escaped when the brain was removed.

In the falx cerebri, about a quarter of an inch from the lower boundary, and two inches from the anterior edge, was found an irregularly spiculated piece of bone, sharp and pointed; several other much smaller pieces were seen at some distance from it. The arteries of the brain contained large, firm, fibrinous clots, which could be drawn out continuously for some inches.

When the calvarium was removed, a depression in the brain was observed, and, upon searching for the cause, a bony outgrowth from the frontal bone was found, which projected inwards. It was situated above the right frontal sinus; other small bony projections were to be seen near it.

It is most probable that the brain suffered so much from the pressure of the tumor, that epilepsy was the result; the condition of the membranes would also favor this supposition.

DR. GROSS inquired into the state of the supra-renal capsules.

DR. MORTON.—One existed.

DR. LEVICK commented upon the mode in which death had occurred in this case, and remarked, in this connection, that the fibrinous clots extending from the heart into the smaller vessels of the brain, might have a direct bearing in explaining the symptoms preceding death.

DR. RICHARDSON alluded to the rarity of a single kidney.

DR. GROSS stated that he had a specimen of this kind in his collection.

DR. HARRIS presented the following remarks in relation to the specimen before the Society:—

The human kidney is subject to numerous variations in regard to its position, form, mobility, vascular connections, and the arrangement of its excretory ducts. In some instances one, and in others, both glands have been found wanting; but those in which the latter condition is said to have existed (except in the cases of newly-born infants) are not sufficiently well authenticated to be received as positive proofs. Two, and sometimes more, kidneys are occasionally united to form one; and numerous examples of this error of conformation may be found by referring to the medical periodicals and standard works which have been issued during the last two hundred years. In the journals of our own country, very few cases have been reported. "The American Journal," with its predecessors of the same series, running through a period of fifty-four years, does not report a single case; the same may also be said of "Bell's Medical Journal;" "The Boston Medical and Surgical Journal;" "Philadelphia Medical Examiner;" "New England Journal of Medicine and Surgery;" "North American Archives of Medical and Surgical Science;" "Virginia Medical and Surgical Journal;" "New York Journal of Medicine;" "Boston Medical Magazine;" and "The Transylvania Journal of Medicine and the Associate Sciences."

Before entering more particularly upon the subject of *fusion* of the kidneys, it may be well to examine into the nature of the other errors of conformation and position, above referred to.

1. *Position.*—This is quite variable, one or both glands being not unfrequently found higher or lower than the situations in which they are usually placed. Many cases are upon record, where one or both of the kidneys (though seldom the latter) have been found in the superior or inferior pelvis; and instances of the first variety have no doubt occasionally been the means of leading an examining physician to conclude that his patient had had but one kidney. In an example recorded by Rayer,* of which a plate may be found in the Atlas accompanying his work, the misplaced kidney was discovered low down in the pelvis, in front of the sacrum, and in a vertical position; it was smaller than the one normally situated, and received its arterial supply from a vessel which was given off by the aorta, between the origin of the primitive iliacs. As the other kidney was larger than natural, and the capsula renalis of the misplaced one in its usual situation, the latter might very readily have escaped the eye of a physician in making a post-mortem examination, if conducted, as we are frequently obliged to conduct them, in private practice. In most cases of

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* Maladies des Reins, tome iii. page 784.

misplaced kidney, the supra-renal capsule of the same side occupies its accustomed seat, thus giving, by its independence of position, one proof of the absence of any material connection in the functions of these two bodies. Besides the forms of misplacement mentioned, cases have been met with where the two kidneys were discovered lying in front of the sacro-iliac symphysis, or placed close to each other, and in front of the vertebral column. The *floating kidney*, hereafter to be referred to, is another example of malposition.

2. *Size.*—This is subject to more variation than the position, though often influenced by the latter. Disease is one great cause of augmentation or diminution of the gland; but with it we have nothing to do at present, having only reference, in this connection, to variations in volume, which result from other causes. When one kidney is smaller than natural, the other is usually found correspondingly enlarged; and where there has been an early arrest in the development of one, the other is nearly or quite double the natural dimensions. The same may also be said of the effect of the absence of one kidney. Single kidneys seated in the lower pelvis are generally smaller than natural, and have a very short ureter.

3. *Form.*—Single kidneys vary but little in shape when in a healthy state, except when their growth has been affected by the peculiar position in which they have been placed. A few instances are upon record where a single kidney was found longer and much more curved than natural, constituting one of the varieties of *horse-shoe kidney*, though this title is generally applied to a peculiar variety of fusion. Kidneys developed in the pelvis are generally of a different form from those found in the lumbar region, being usually more cylindrical and narrow; though in this there is no uniformity, as the shape depends very much upon what part of the pelvis they occupy. We shall have more to say upon the varieties of form, when we come to consider more minutely the subject of fusion of the kidneys.

4. *Mobility.*—In their natural position the kidneys are very firmly fixed, but we sometimes meet with cases in which the arteries and veins connected with a single kidney, or with a fused one composed of two, are exceedingly long, and act, to a certain extent, as a means of suspension for the gland, allowing it to float, as it were, among the intestines, in the abdominal cavity. Such cases are sometimes mistaken for abdominal tumors, and are very difficult to recognize in the living subject. Though not properly a disease, this peculiar condition may give rise to much disturbance of the digestive organs. An example of this malformation may be found in the work of Rayer, before quoted; another in the "Boston Medical and Surgical Journal," vol. xxv. page 275; and four in the "London Lancet" for 1842–3, vol. ii. page 558. The last were observed

by M. Aberle, and reported by him; one of them is taken from the "Salzburg Gazette," of 1826, and the other three from "Schmidt's Jahrbuch," vol. xxxii. p. 312.

5. *Vascular connection.*—The kidneys, in their natural form and position, are generally each supplied with blood through one arterial trunk, and the circulation returns through one vein; but various departures from this rule are to be met with; sometimes there are several emulgent arteries to a single kidney, and when a fusion of two or more glands has taken place, it is common to find for each section a separate artery and vein. In misplaced kidneys the renal artery may come from some point considerably below the natural level of the kidneys. In floating kidneys, however, the veins and arteries are usually given off from the points whence they proceed, in cases where the glands are normally situated.

6. *Arrangement of the excretory ducts.*—Variations from the usual condition are not at all rare. A single kidney may have a double pelvis, or two pelves and two ureters, which last may either unite to form a common trunk, or continue separately to the bladder. Rayer gives a plate of one case where each kidney had two pelves and two ureters, and these conduits all entered the bladder distinct from each other. The ureters from two kidneys may unite to form one common canal. In fused kidneys there may be one, two, three, or four ureters, which may continue distinct from each other until they enter the bladder, or two or more may unite to form a common conduit. The ureter may not enter the bladder at all, but empty into the urethra; a case of this character, where the ureter was double, and entered the urethra just in front of the neck of the bladder, may be found recorded in the "Boston Medical Magazine," vol. iii. page 332. In fused kidneys the calyces are generally much longer than natural, and are exposed to view by simply removing the fat which covers the depression in which they and the pelvis are situated. We now come more particularly to the subject of union of the kidneys, and with it may properly be included that of redundancy of kidneys.

Though comparatively of rare occurrence, fusion of the kidneys has been met with sufficiently often, during the last two centuries, to have given, in the medical books and periodicals where they have been reported, a considerable number and variety of examples. The most common form of union is that known as the *horse-shoe kidney*, (this title, as I have before mentioned, is sometimes also given to a single kidney of an unusually curved form,) in which the two kidneys are united across the spine at one or other of their extremities, (in most of the instances I have found recorded it was the lower,) either by a direct union, or through the medium of a connecting band or *isthmus*. Another variety is that in which there are more than two kidneys united together in a somewhat crescentic form, and showing, by constrictions at certain points, the number of glands composing the whole mass. Each section is supplied with its own vessels, and sends off a separate ureter. I will refer to a few of the cases which have been reported, as examples of these peculiar forms of fusion.

Rayer* reports, with an accompanying drawing, a case of horse-shoe kidney, with the concavity upwards, having a double pelvis and a single ureter. One instance of the more common horse-shoe kidney, with two ureters, such as they are usually found, is reported in the "Dublin Quarterly Journal of Medical Sciences," for 1846, vol. ii. page 239; another in the "Edinburgh Medical and Surgical Journal," for 1819, vol. xiii. page 90; and three cases in the "London Lancet." Similar cases have been met with by Panthot, Kaltschmidt, Bartholin, Wrisberg, Gebbard, Sandifort, and many other European writers. Rayer mentions having seen a crescentic kidney in which there were three distinct glands, united by their extremities. Botal, Gemma, Dalestang, and Monginot report cases of quadruple kidneys, each section of which possessed its distinct pelvis, ureter, and blood-vessels. In all these cases above referred to, the fused kidney was situated either transversely or obliquely across the spine.

From all the information that I have been able to collect from the monographs and journals consulted, I am led to the conclusion that the variety of double kidney exhibited by Dr. Morton is, with one exception, the most rare of all the examples of fusion of the two glands. The exception referred to, is that form of double kidney described by Sandifort,† where one gland was found in its natural position, and the other placed immediately in front of, and united with it; two pelves and two ureters proceeded from this welded gland.

I have been able to find but two cases recorded in all the volumes of journals, (amounting to several hundreds,) and in the books that I have examined, which very nearly resembled the specimen now before us. One is delineated in Rayer's plates, and the other is reported in the "North American Medical and Surgical Journal," of 1829, vol. vii. page 176; a reprint from a foreign periodical. Both these kidneys were seated transversely across the lumbar vertebræ, and had two pelves and two ureters, which, in each specimen, came from the anterior surface of the mass.

Three peculiarities distinguish the fused kidney upon the table from all those of which I have found full descriptions. 1st. Almost the entire mass was situated upon one side of the spinal column, a small, thin portion only, overlapping the vertebræ. 2d. The concave edge, instead of the convex, presented downward, and the pelves toward the psoas magnus muscle. In most instances the pelves are either upon the abdominal surface or the concave edge of the gland. 3d. Although the gland, from its size and the number of its ureters, is clearly a double one, in form, position, and vascular connection, it bears a close resemblance to a single hypertrophied kidney.

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* Op. Cit.

† Obs. Anatom. Pathol., Lib. iii. Cap. vii. page 96.

Cancer of the Lung and of the Mesenteric Glands.—DR. DARRACH presented a cancer of the lung, and remarked as follows:—

The subject of the above-mentioned disease was a married man, aged sixty-five years. He was of a spare figure, had a well-developed chest, and could count with ease 100 in a breath. At the time he was first examined (Jan. 6th, 1858,) no affection of the lung could be discovered, by a careful physical examination of the chest: the symptoms of which he complained were vomiting of food, acidity of the stomach, eructations, and, on pressing over the region of duodenum, a "deep soreness." His indisposition first appeared about two years ago, and had increased most rapidly within the last three months; but more especially for the last two or three weeks. Within the latter space of time he retained scarcely anything on his stomach. He had also become lately very irritable in temper, and indisposed to use either body or mind. Thinking that the patient might be suffering from a severe attack of mal-assimilation, commonly called oxaluria, a specimen of his urine was examined, but no oxalates were discovered. The quantity of urine passed in the twenty-four hours was about forty fluidounces, (sp. gr. 1020.) In less than forty-eight hours, in a cool room, the fluid still remaining slightly acid, there appeared a most abundant formation of vibriones, which constituted a dense cloud throughout the mass of urine. From this formation it was inferred that he was laboring under some very depressing influence, the nature of which was not as yet perceived. The patient had also been suffering for some weeks from hemorrhoids.

The treatment followed out at this time was as follows:—Nux vomica, gr. $\frac{1}{8}$ four times daily, with blue pill at night, and carefully regulated diet, &c. But the patient continued to grow worse and worse. Emaciation became extreme; the hemorrhoids, for some weeks before his death, bled at every discharge from the bowels, frequently as much as a pint. His mind became at times wandering, and he seemed to be succumbing, as his family physician remarked, to some serious blood-disease. A short time previous to his death, cancer was surmised, probably of the liver, yet the pulmonary symptoms remained extremely obscure. There was no hemorrhage, and but a trifling cough.

Death occurred on the 26th of March. An examination of the body was made on the afternoon of the 27th. The cranial cavity was not examined. The upper lobes of both lungs were solidified with what appeared to the naked eye to be undoubted tubercle, but which, on careful examination with the microscope, by Dr. Da Costa and myself, was satisfactorily proved to be cancer. The elements found consisted of cells with large nuclei, many of the cells being peculiarly transparent, and exactly resembling those described by Dr. John Hughes Bennett, in his work on "Cancerous and Cancroid Growths," page 45, as occurring in cancer of the lung. There were also cancer nuclei and granular matter.

The liver was dotted over its surface with very small, perfectly circular patches, of a white matter, dipping slightly into the liver substance, their centre having a depressed appearance, as is not unfrequent in cancer of that organ. I could not satisfy myself as to the cancerous nature of the elements composing them.

The stomach, bowels, kidneys, and spleen were normal; the lumbar glands were very much enlarged by a deposit, which gave to them the appearance of scirrhous cancer, yet on cutting into them, they were neither very hard nor resistant. The cut surface became convex, and was of a slightly yellowish hue; no creamy fluid exuded. Microscopically examined, these glands showed elongated, nucleated, fibroid cells, such as Paget has described as occurring in some structures affected with medullary cancer.

DR. STILLÉ inquired of Dr. Darrach whether diarrhœa had existed, and also what was the state of the glands in the small intestine?

DR. DARRACH.—The glands were not examined; diarrhœa had not been a symptom during life.

DR. STILLÉ spoke of the absence of diarrhœa as being a symptom of importance as regards the diagnosis between cancer and tubercle of the mesenteric glands. He believed that in an adult, tubercle of the mesenteric glands is very rarely, if ever, met with, without the glands of the intestine being affected. As here no diarrhœa existed, and as the signs of disease of the lung were evidently consecutive to those of the abdominal cavity, he thought the presumption, even during life, would have been strongly in favor of cancer.

Cancer of the Pancreas and Stomach.—DR. AGNEW presented a specimen of medullary cancer of the pancreas, with a similar deposit at the cardiac orifice of the stomach. The patient from whom they were removed (aged about fifty-six years) came under the care of Dr. Ludlow nine months ago, and from the character of the symptoms, the case had been diagnosticated as one of cirrhosis of the liver. The patient's first indisposition was three months previous; up to this period he had enjoyed good health. He was a good liver; fond of hot suppers and richly cooked food; his hours of eating were irregular, sometimes very late at night; he used malt drinks habitually, and occasionally spirituous liquors, but not to any great extent. His weight at the time of his attack was 250 lbs. The first symptoms of indisposition were those of ordinary indigestion, with occasional nausea and oppression at the stomach, a feeling of fulness over the abdomen, and constipation of the bowels. The loss of a situation, which he had held for several years, depressed his spirits very greatly; and with this his physical distress increased rapidly. Vomiting occurred; pains of a flying character passed through his abdomen, chest, and right shoulder; the stomach rejected for a time all kinds of food; the matter vomited was of a glairy, viscid character, and exceedingly offensive; hiccough set in, and became very troublesome; also great accumulation of gas occurred, which could only be expelled by thrusting the fingers down the pharynx, in order to produce forcible gagging. His strength failed, and emaciation progressed rapidly. At one time nothing seemed to arrest the hiccough so well as small pieces of hoarhound candy; this, however, soon lost its effect, and the continued hiccough became very distressing. During the intervals of repose he would allow no one to move, shut a door, or even speak, as the least excitement would produce a violent return. The hiccough was finally controlled by small doses of strychnia and morphia. The vomiting and the unpleasant gastric symptoms were much benefited by a combination of ext. taraxici with an alkali and creasote, and by occasional small doses of calomel and bismuth. His complexion became pale and bloodless, and his countenance distressed; the eyes anxious; the pulse small and feeble. The bowels were very torpid; when moved, the evacuations were clay-colored, but sometimes of a greenish hue; the urine was high-colored, and deposited a heavy sediment; it contained bile and much mucus. Though latterly he was very much relieved of nausea and hiccough, yet emaciation went on rapidly; the fat disappeared almost entirely, and he appeared to die from entire want of assimilation.

Autopsy confined to the abdomen.—The body was reduced to about 120 lbs., its color indicating a cancerous cachexia. On turning off the abdominal walls, the tissues and organs were found to be perfectly blanched from want of blood; no peritonitis existed; the liver was in a complete state of cirrhosis, also enlarged; the gall-bladder empty; the kidneys were in a state resembling cirrhosis; the pancreas increased to more than four times its size, its glandular structure having apparently disappeared, and being replaced by a mass of brain-looking substance; the stomach, when opened, seemed to be healthy, except at the cardiac orifice, where a deposit similar to that in the pancreas existed. On examination by the microscope, both in the deposit in the stomach and pancreas, cancer-cells were found, remarkable for their great size and diversity of form. The rapid emaciation Dr. Agnew attributed to a mechanical as well as a constitutional cause, namely, pressure of the pancreas on the thoracic duct.

Aneurism of the Aorta, bursting externally.—DR. PACKARD exhibited a specimen of aneurism of the aorta, and remarked as follows:—The patient, a colored man, aged forty-eight, was a porter in a carpet store, and kept at work until the latter part of February last.

In July, 1857, he had a cough, which, however, was not very severe, and soon afterward he perceived a swelling at the upper and front part of his chest. He applied to me in February, 1858, (seven months later,) with a swelling of the size of a large fœtal head, occupying the site of the upper part of the sternum, and extending more to the right than to the left of the median line. The pulse in the two carotids was almost alike,—that in the right radial was slightly less than that in the left. There was no numbness, but some pain, in the right arm, and a very marked pulsation in the tumor, but *no thrill whatever;* the clavicle on each side seemed bent and pushed forward, carrying the sterno-cleido-mastoid muscle along with it.

The treatment adopted was palliative; but the tumor enlarged so rapidly as to measure, on the 2d of May, 10¼ inches in semi-circumference from one side to the other, and 11 from above downward. Discoloration appeared at the most prominent part, and on the 6th of May, at 10 P.M., a small slough separated; some bleeding ensued, which was checked by means of a hemlock plaster till 6 A.M., on May 7th, when it recurred so violently that his death was instantaneous.

Autopsy 10½ hours after death.—The tumor only was examined; its anterior wall and the superjacent skin were extremely thin, and closely adherent to one another; they could, however, be separated with the fingers, except where traces existed of the sterno-cleido-mastoid muscle, and here the union was very close and firm. The sac being cut into, an immense clot was found in it, very firm below and in front, as well as at the posterior part, but becoming grumous above, toward the point where the fatal opening had taken place. Several ribs were felt projecting into the cavity of the sac on each side, in a roughened state, and a portion of the sternum lay imbedded in the clot, in a similar condition. The vessel involved was the ascending aorta and the arch; the innominata was increased in diameter to about an inch; the left carotid and subclavian were normal. Atheromatous deposits existed, to a great extent, in the descending aorta. The trachea was flattened, and pushed over to the left side of the vertebral column, which was sound; the lungs were healthy, but adherent to the tumor by their apices.

DR. DA COSTA stated that, through the kindness of Dr. Packard, he had had an opportunity of examining the patient during life, and it had struck him, as a point of great interest, that not only was no thrill present, but also no blowing sound could be perceived. The sounds over the tumor were two sounds like those of the heart. The second sound was short and indistinct; the first was long and prolonged, and, if such an expression be permissible, weighty. They differed not only in strength from those of the heart, but also, it had seemed to him, in pitch; this was especially the case with the first sound. Both sounds of the heart, listened to at the apex, and ensiform cartilage, and at midsternum, near the aortic cartilage, were distinct, but not otherwise altered. The impulse of the heart was forcible, and somewhat extended.

DR. STILLÉ inquired into the probable production of these sounds in the tumor. Were they not produced in the sac?

DR. DA COSTA could not answer this positively. As the sounds were stronger than those of the heart, they could not have been transmitted sounds, unless we assume that they gained in strength by the peculiar physical conditions of the sac. If not thus produced, they must certainly have been generated in the sac.

DR. PACKARD did not believe that they were thus caused. He regarded the sounds heard over the tumor as the transmitted heart-sounds, since their similarity was very great.

Urinary Calculus.—DR. ALBERT H. SMITH presented, through the Secretary, a stone weighing 164 grains, which was extracted from the bladder of a child two years old, by Dr. Norris, in the Pennsylvania Hospital. The following history accompanied the specimen:—George Grater, aged two years, of Bucks County, Pa., was admitted into the hospital on the 3d of May, 1858. He has a light complexion, blue eyes, light hair, and looked quite anæmic, and very delicate and sickly; his countenance exhibited marked distress, presenting, for a child, a most care-worn expression. From the day of his birth he has suffered with incontinence of urine, the discharges being interrupted, and attended with great pain, and with excessive tenderness in the whole perineal region. He had great nervous irritability, deficiency of appetite, restlessness, morbid fear of strangers, fretfulness, and every symptom of a constitution worn and harassed by constant internal irritation. His parents stated that he has not passed a day since his birth free from acute suffering.

When admitted into the hospital he exhibited the same symptoms as above mentioned, besides having prolapsus ani and diarrhœa. By sounding, a calculus was detected in the bladder. On the 5th inst., Dr. Norris removed from this viscus, by the lateral operation with the gorget, a phosphatic stone weighing 164 grains. Notwithstanding the unfavorable condition of the child previously to the operation, he has not had an unpleasant symptom since. His restlessness and general irritability have greatly diminished; he sleeps well, has a good appetite, and, as his mother says, he seems more comfortable than he has ever been since his birth.

The most interesting feature of this case is the evidence of the affection being congenital. Cases of stone in new-born children are rare, so far as statistics show, though enough are recorded to prove their possibility. Civiale expresses himself entirely free from doubt on this point; and, although he has never seen a case himself, he quotes from Brendel a case of a child who passed a red sand, and dying on the second day after birth, its bladder was found to contain a stone of considerable size; also two cases of children in whom calculi were found in the fossa navicularis within twenty-four hours after birth. Numerous instances are also cited in children, of age ranging from two days to six months, in which there was probability of the stone having been formed in utero. That this affection is rare, however, in infants so young, may be inferred from the fact, that out of 5376 cases collated by Civiale there were only three under one year of age. One case mentioned as having been operated upon at that age was followed by death. The mortality in thirty-seven cases operated upon at two years of age was seven.

The size of the stone extracted from this boy is much greater than any that I have been able to find recorded as met with in a child of two years of age. The largest one mentioned at that age weighed one drachm, and is quoted by Crosse. It occurred at the Norwich Hospital.

WEDNESDAY EVENING, May 26th, 1858.

The President, DR. GROSS, in the chair.

Dilatation of the Meningeal Artery, producing a Bony Protuberance on the Head.—DR. AGNEW exhibited a skull-cap which had, on its internal surface, a very large groove for the meningeal artery. This groove terminated in a dilatation near the vertex, probably of an aneurismal nature. At the seat of the groove the internal table was absorbed, and the external table formed a considerable protuberance. The artery on the other side was large, but in its dimensions far inferior to that of the left side. The specimen was obtained in the dissecting room, and no history could be procured.

DR. STILLÉ would ask of Dr. Agnew whether he thought that this protuberance could, during life, have been distinguished from an exostosis, and its cause determined?

DR. AGNEW thought that a careful examination might have detected a thrill.

DR. STILLÉ had reference to this in asking the question. He also believed that a thrill might have been present, and thus served as a diagnostic sign. This aneurismal dilatation is extremely interesting. The occurrence of a tumor of the kind might lead to the erroneous supposition of a syphilitic exostosis.

DR. AGNEW believed that exostosis, syphilitic or otherwise, most frequently springs from the inner table, which, on the contrary, in the specimen before the Society, was absorbed.

DR. HARRIS did not agree with Dr. Agnew in this respect. He had a head in his possession, where, from a fall, an exostosis of the outer table had occurred.

DR. HEWSON also differed from Dr. Agnew with reference to this point. He had now a young lady under his charge in whom an exostosis had been developed after accidently striking her head violently against the door of a carriage. The protuberance was evidently produced by deposit on the external table. There had been no fracture, and there was no pulsation nor thrill to be felt, although the patient herself experiences a pulsation at times in the tumor. Dr. Hewson alluded also to the fact that pulsating tumors on the scalp, supposed to be aneurismal, might be of a malignant nature, as an interesting case reported by Dr. Neill proves.

DR. GROSS had seen several cases of pulsating tumors on the head, dependent upon dilated arteries. Two in especial were interesting. They were both of several years' standing, and led to absorption of the bony tissue, bringing thus the scalp and the dura mater in contact.

Bright's Disease—Fibroid Degeneration of the Kidney.—DR. MORTON presented a kidney filled with fibrous deposits. It was taken from a man who died in the Pennsylvania Hospital from effusion into the brain. Prior to his admission he had received a compound fracture of the leg, for which his limb was amputated at Norristown. The man, after being conveyed to the hospital, became comatose, and sank rapidly.

Urine taken from his bladder after death was examined, and found to contain granular casts. The kidneys, when cut into, presented a glistening whitish appearance, and were very firm in consistence. Microscopically examined, they abounded in fibrous tissue and fibroid cells.

DR. HEWSON spoke of the prognosis of amputation always being more unfavorable in cases in which the urine contained albumen, or showed, as pointed out by the observations of Bence Jones, signs of waste of tissue in the economy.

Imperforate Rectum.—DR. STILLÉ, on behalf of DR. J. FRANK BELL, presented the following notes of a case of *imperforate rectum*:—

Past History.—The mother of the child, healthy and multipara, was delivered at full time on May 11th, 1858. The child was of good size, and appeared healthy; but on the third day, no meconium having passed, I saw it for the first time; and made an examination, when the following appearances were presented:—

A well-formed male child; seems healthy, and is tranquil; urine clear and passed freely; anus perfect; admits a probe three-fourths of an inch, when it meets with firm resistance; on very slight pressure against the probe the child cries.

Diagnosis.—The most simple form of imperforate rectum. An operation was deferred on account of there being no convexity of the membrane downwards.

May 15th, 2 P.M. Saw the child and made a second examination. The parts present the same appearance as yesterday. An old-fashioned ear speculum showed a well-formed *cul de sac*, with folds of mucous membrane at the bottom. There is still no protrusion, or convexity, of the membrane; abdomen tense in hypogastric region. Assisted by my friend, Dr. E. R. Duval, I punctured the membrane across the rectum with a medium sized trocar; after its introduction the stylet was withdrawn, when meconium passed through the canula. The trocar met with considerable resistance. The removal of the canula was followed by the discharge of one or two fluidrachms of blood of a bright-scarlet hue. The bleeding, however, stopped after a few moments, when the child was put to rest, and a dose of sweet oil given.

May 16th, 12 M. Some meconium passed last evening; also a small quantity this morning. The child rested badly last night; appears hungry, but refuses the breast; abdomen slightly enlarged; tympanitic. A medium sized catheter is introduced into the rectum with ease, but seems to be grasped at the point where the perforation was made, so that it turns on its axis with difficulty. An injection of warm water was thrown into the bowel, and was expelled with considerable force, accompanied by meconium and flatus; repeated injections procured a tolerably free discharge of meconium. Sweet oil was again administered.

May 17th, 2 P.M. No meconium passed since the last visit. The child rested well last night; nursed once in the fore part of the night; vomited twice in the latter part; vomiting not stercoraceous. The nurse thought it dying this morning at 10 o'clock. It, however, soon rallied; but has been growing gradually weaker since. Abdomen quite tympanitic; the child is very weak. The tube passed readily into the bowel, but is firmly grasped at the seat of the artificial opening; warm water injection used, which was expelled, accompanied by meconium and flatus; some toddy administered, after which the child rallied, but soon again began to sink, and died at 5 P.M.

May 18th, 7 A.M. Post-mortem examination twelve hours after death.—

Abdominal viscera normally situated; extensive peritoneal inflammation; mucous membrane of stomach and intestines healthy down to the rectum; the lining membrane of the latter highly injected; the rectum is surrounded, three-fourths of an inch above the anus, by what appears to the naked eye to be a fibrous deposit; it is one-half inch in length, and had been perforated by the trocar, leaving its walls one-fourth of an inch thick; it is quite firm under pressure, and cuts with a very perceptible grating noise; the rectum, immediately above this, was four or five times its normal size. There was no microscopic examination made of the part. The bladder, kidneys, and other abdominal viscera were perfectly healthy. No other cavity was examined.

Remarks.—Death in such cases is the rule; my case, as the record shows, forms no exception to it, and presents in this respect nothing peculiar. When the case was examined before the operation, it exhibited all the appearances of the most simple form of imperforate rectum, viz.: a simple membrane extending across the bowel, with these exceptions, that there was no convexity, or pouting of the membrane downward, and very slight pressure against the probe when the child cried. The absence of these symptoms is readily accounted for, by the dense deposit found surrounding the rectum, in a ferule-like manner, or rather taking the place of the rectum. The rectum above was continuous with the deposit, and its large size here may have been the result of the accumulation of meconium and gas after the birth of the child. In the *Boston Medical and Surgical Journal* for February, 1858, p. 512, I notice that Dr. J. B. S. Jackson thinks that the enlargement in the lower extremity of the bowel, in imperforate anus, is not due entirely to an accumulation after birth.

In all of the recently reported cases that I have examined, and in several surgical works, I can find nothing spoken of that resembles the one above reported, in regard to the fibrous deposit; but in the *Medical Facts and Observations*, London, 1791, vol. i. p. 238, I find a case reported by "Mr. Edward Ford, Surgeon of the Westminster General Dispensary," accompanied by a drawing of the rectum and deposit, as found at the post-mortem examination. This drawing is a true representation of the parts, as found in the case above. He says, in speaking of his "dissection," that "the rectum terminated in a blind pouch, at the distance of an inch from the anus, in the hollow of the sacrum. The space between the intestine and anus was lined by an inelastic ligamentous substance, which would probably have produced much inconvenience to the patient in retaining his stools, had the operation performed protracted his existence."

He does not mention whether there was or was not the grating noise under the knife; otherwise, so far as I can see, the two cases are precisely alike pathologically; and had my patient lived, I can readily understand that he would have presented all the symptoms of one laboring under well-marked stricture of the rectum.

DR. HARRIS related a case of a child which had been operated on for imperforate anus forty-eight hours after birth. The intestine above the stricture formed a *cul de sac*, which was very large. The child lived twenty-two months after the operation, but was never in very good health. It died of a diarrhœa, brought on by eating fruit. Seven cherry-stones were found above the seat of stricture; they could not pass through the opening.

DR. GROSS thought that in very many cases there is a dense, fibro-cellular band in which the bowels terminate. It forms a barrier, an inch to an inch and a half in length, and gives rise to much difficulty, even after the operation.

DR. HEWSON believed that most cases of imperforate anus arise from arrested development, and not from morbid growths. In the fœtus these parts are all developed from the same structure, and in the earliest stage of fœtal life there is no communication between the anal orifice and the bowel. Now, in some cases of imperforate rectum, we meet with an opening into the vagina, which, as the rectum and vagina in fœtal life communicate, would prove many of the cases to depend upon an arrest of development.

DR. STILLÉ did not think that this could here be the case, since under those circumstances no increase of fibrous tissue occurred. Nor did he believe that the case was one where the bowel terminated in a fibro-cellular band. The fibrous substance here existed not only between the two parts of this bowel, but in large quantities around the termination of the upper portion of the rectum. The great thickness of the fibrous formation prevented this portion from being pressed down in a sac-like form.

Serous Apoplexy of the Retina.—DR. ADDINELL HEWSON related the history of the case of an Irishman, a bootfitter by trade, affected with this lesion. The patient was aged thirty-seven years, married; of a scrofulous diathesis; partially bald; and had grayish-blue eyes. He was an industrious man, and followed his trade steadily from 6 A.M. to 12 P.M., and was obliged to tax his sight at his work. But, although he was not intemperate, he was in the frequent habit of dram-drinking.

One day in the month of August last he went out through the broiling sun, about noon, into the yard to urinate. On his return to the house he was suddenly seized with a peculiar dimness and imperfection of vision in his left eye. One-half of everything he looked at with this eye appeared to possess a bluish-yellow or greenish hue, and to be hollow or flat as the object was either really plain or convex. Dr. Hewson saw him six weeks after this occurrence, these symptoms were still present though not as intense as they were at first. There was to the unaided vision nothing apparently the matter with the eye. The pupil was natural, regular, uniform, and responded promptly to the light. The ball seemed very firm. The ophthalmoscope revealed an effusion between the hyaloid and retina, of a reddish-yellow color, and extending over the right hemisphere of the eye. Through this effusion the vessels of the retina could be but indistinctly seen; they appeared large and seemed to project forward, as though the effusion had taken place behind as well as in front of the retina. This fact could be especially well perceived at the points where the vessels passed from the circumference of the optic nerve to be distributed to the retina. This patient was blistered very frequently on the temple, and put on Plummer's pill, gr. iij., thrice daily. Under this treatment he rapidly recovered his vision and was quite well by the end of October. During the progress of his case he was frequently examined, and the absorption of the effusion readily noted.

Cancer of the Liver and Mesenteric Glands.—These specimens, which had been previously exhibited to the Society, were removed by DR. BRAGG from a patient under the care of Dr. S. W. MITCHELL at St. Joseph's Hospital. The following description was given:—

The liver and mesenteric glands were markedly cancerous. The liver was also in a state of fatty alteration and greatly enlarged, so that the stomach was displaced and thrust to the left side,—the cardiac portion being in the left hypochondriac region, and the pyloric extremity in the left iliac fossa. The organ was enormously distended, and presented numerous ulcerations and two small cicatrices upon its mucous surface. The cancerous tissue was soft, and composed principally of large cells and free nuclei. The cancerous portions of the liver were light in color, and level with the surface of the organ. All other organs were healthy.

The more remarkable points in connection with this case were the total absence of pain and of burning, even when irritating condiments were used as food. Pressure over the region of the stomach also gave no pain, but pressure below the ensiform cartilage really affected the liver and not the stomach, which was, as above stated, completely dislocated. Vomiting was almost the only evidence of the presence of ulcers in the stomach, and this symptom easily yielded to $\frac{1}{3}$ gr. doses of nitrate of silver. The existence of cancer of the liver was diagnosticated during life; but the great bulk of what was felt as a solid tumor in the epigastric region was due to the increase of the size of the liver from fatty deposit, while the mass of the cancer lay behind both liver and stomach in the mesenteric glands.

American Progress of Medical Science.

REPORT ON PRACTICAL SURGERY FOR THE YEAR 1857.

PART II.

By EDWARD HARTSHORNE, M.D., one of the Surgeons of Wills' Hospital, Philadelphia.

Extirpation of Parotid. J. M. WARREN, M.D. (Boston Med. and Surg. Journal, May 14, 1857, p. 290.)—In a paper on *Tumors in the Parotid Region*, Dr. Warren states his experience, as to an important matter, in the following paragraphs:—

"As to the practical question which is often raised, whether the gland can be removed without the ligature of the carotid, the result of my experience is this. The parotid gland has been removed by me in six instances, which are given below; three for scirrhous disease, one for erectile tissue, one for melanosis, and one for hypertrophy; in none of these was the great artery tied. The experiment of dissecting out the parotid gland in the dead subject has been frequently made by me, and with a little care this can be done in most instances, leaving the great vessels behind, although sometimes a small backward-projecting bit of the gland is left, and this has been observed to escape disease. But in scirrhous affections, where the gland undergoes a gradual induration, the vessels are frequently pushed backward, as they were in one or two of the cases here given. The above observation is confirmed by my friend and colleague at the hospital, Dr. Gay, who made similar dissections on the dead body to ascertain this point.

"In a case mentioned by Dr. J. C. Warren the carotid was cut at the end of the operation, and the jet of blood struck the wall. The vessel was secured, the carotid being compressed below, and the patient did well. In a second case for the removal of a scirrhous parotid, in which I assisted Dr. Warren, the carotid was divided and tied. Three days after, as the patient was straining at stool, the vessel gave way, and the blood struck the ceiling. He almost at once fainted, and the friends were fortunately sufficiently cool to place a sponge in the wound, and to check the flow partially. I was called, and at once cut down upon the carotid in the neck, tied it, and stopped the further effusion of blood. Bérard, in his monograph on this subject, mentions many instances of removal of this gland without ligature of the carotid."

The paper is completed, in illustration, with the history of the six cases above alluded to.

Excision of the Tonsils. From the Records of the Boston Society for Medical Improvement. F. E. OLIVER, M.D., Secretary. (Boston Med. and Surg. Journ., May, 1857, p. 238.)

"DR. J. MASON WARREN remarked that he had lately removed the tonsils from a child, in whom, in addition to the ordinary symptoms of obstruction to the breathing, and alteration of the voice, was produced a most remarkable spasmodic cough resembling the barking of a dog.

"Dr. W. said he would take this opportunity to speak of the result of his experience in the operation for excision of the tonsils. Some years since (1839) he had read before this Society some remarks on enlargement of the tonsils, attended by certain deformities of the chest, and the result of twenty cases was given in which the operation had been performed. This was published afterwards in the *Philadelphia Medical Examiner.* More lately, he had given the result of two hundred cases which required operation, and at present his experience would reach to above five hundred instances in which the tonsils required to be removed. These cases had not been taken indiscriminately, but the operation was only performed where the symptoms were more or less urgent, and other remedies had failed in affording relief; causing deformity of the chest, difficulty of breathing, choking at night, unnatural and offensive discharge from the mouth and nasal passages. Many of these cases were brought from a distance, on account of the importance and severity of the disease.

"In none of these cases had he ever seen any fatal acccident occur, or had reason to regret the operation. In but two cases, and those not in his own practice, but where he had been called in after the operation, had he seen any serious hemorrhage; both these cases did well. In almost all of them the symptoms were at once relieved, the patient was able to take his food with comfort, to sleep better, and exchanged a pallid and depressed aspect, for a healthy and animated appearance. To the rapidity with which some of them had gained flesh, as soon as a proper amount of oxygen was allowed to penetrate to the lungs, many of the gentlemen present would bear witness. He could conscientiously say that he knew no minor operation in surgery that afforded greater relief and more satisfactory results than the one under consideration.

"In answer to the question whether the tonsils were ever reproduced, requiring a repetition of the operation, Dr. W. said that in four or five instances only had he been obliged to repeat the operation. The whole of the tonsil never is or ought to be removed. When the enlargement is very great and irregular, it sometimes extends down the throat with a broad base, and it is not possible to embrace at once in the instrument as much of the tonsil as it would be desirable to remove, and the apex only is excised. The consequence is, that the lower portion afterwards rises up and comes into view, causing obstruction, and requiring another operation. These cases were, however, very exceptional.

"The instrument that Dr. Warren had always used was the guillotine instrument, introduced into practice by Dr. J. C. Warren—made perfectly simple, without any needle or spring to seize or drag out the part to be removed. The thick mucus of the fauces causes the portion to be cut off to stick to the instrument, so that it seldom escapes into the throat. The objection to those instruments which cut by pulling the knife out is, that they require to be kept constantly sharp, otherwise the tonsil may be dragged or torn out. The guillotine instrument does not require this, in fact it is better dull, causing less hemorrhage, and possibly a subsequent greater destruction of that part which remains. His own instrument had been to the instrument-maker's but once or twice for the last fifteen years. It was kept bright and in good order by not putting the blades together except when used."

Three cases were then referred to, by different members, in which death from suffocation was due to enlarged tonsils, and a third case in which convulsions were attributed to the same cause.

Case of Spasm of the Glottis, successfully treated by Laryngotomy. DAVID CRARY, M.D. (Virginia Med. Journal, Feb. 1857, p. 123.)—Dr. C. was hastily summoned, November, 1844, to a boy, two and a half years old, who was "choked." He found the glottis completely closed. In a few seconds more the respiration ceased; the face became livid, and all the symptoms of asphyxia supervened. The friends, as well as himself, supposed that the child was dead.

"The thought occurred to me at once, that there could be no harm in opening the trachea, to give the little sufferer the only possible chance for his life. I took him from his father's arms, and placed him across my knees, and, with a common lancet, aimed to make a longitudinal incision through the thyroid cartilage, as near the median line as possible. Owing to the bad position in which I held the patient, and the want of assistants, for whom I had no time to wait, I made the opening a little to one side.

"For the first four or five seconds, it seemed as though the operation would be of no avail; but in a moment more, air and blood were expelled through the incision, and the breathing was presently re-established; so that very soon, when the hemorrhage ceased and the lips of the wound were kept apart, respiration was carried on as freely through the artificial opening as it formerly was through the glottis.

"In the course of an hour, the spasm of the glottis subsided, and the little fellow would breathe first through the mouth, and then through the wound, to his great amusement.

"I allowed the incision to remain open until the next morning, when, all symptoms of dyspnœa having disappeared, I drew the edges of the wound together with adhesive strips. On the second day after the operation, the child played about his room, as though nothing unusual had occurred. At the end of a week, the parts had completely healed, by first intention, and without an unpleasant symptom.

"When I had time to inquire into the condition of the boy previous to the paroxysm in which I first saw him, I learned that he had been put to bed on the evening referred to, in perfect health, as the parents supposed. The distressed breathing was not noticed until a few minutes before my arrival."

Tracheotomy for the removal of a Pebble from the Trachea. DR. SLATER. From the Records of the Boston Society for Medical Improvement. F. E. Oliver, M.D., Secretary. (Boston Med. and Surg. Journ., March 1857, p. 82.)—About eight weeks previously, while jumping in a fright to a piazza, the patient, a little boy, was suddenly seized with violent coughing and symptoms of strangulation.

"A woman who was near at hand, and to whom he made signs indicating that something was in his throat, put her finger into his fauces in order to relieve him, and said that she felt the pebble, and while attempting to remove it, it slipped from her fingers. Almost immediately the violent symptoms subsided, and the boy ran home. From this time the child had occasionally had violent fits of coughing. This cough was very peculiar; being short, suffocative, and slightly stridulous. During the day, for the most part, if kept quiet, he had very little cough, and his breathing was quite easy and natural; but on making any exertion, as in running or going up and down stairs rapidly, coughing was excited, and his breathing rendered so difficult and laborious that it could be heard in almost every part of the house. The fits of violent coughing seldom occurred during the day, unless there was extra exertion. At night, however, after going to bed, the fits of coughing and difficulty of breathing were particularly severe and distressing.

"While the boy was quiet, it was noticed that his expiration was more difficult than his inspiration. On applying the ear to the chest, either front or back, light sonorous and sibilant sounds were heard. They were most distinct when the ear was applied to the acromial region of the right side, either back or front. After exertion these sounds were louder. The whistling sound would disappear for a short time after a fit of coughing, and then return.

"Dr. S. gave it as his opinion, that there was a foreign body in the trachea or one of the bronchi, and advised an operation for its removal."

This being objected to, an emetic was administered to no purpose, and the child was not seen by Dr. S. until two months had elapsed. During this interval,

"Besides the usual symptoms, he had passed through a mild attack of lung fever. The paroxysms of violent coughing became more and more frequent, more distressing, and more prolonged, continuing, for the last few nights, from three to four hours. He complained more frequently of suffering an intense fixed pain in the upper part of the trachea, commencing with the cough, and lasting for some time after the fit was over, but gradually subsiding into greater or less continuous soreness. His appetite was failing and his flesh emaciating. The father was again urged to submit his child to an operation, as affording the only chance to save him."

This was finally agreed to, and performed Feb. 5th, 1856, at 12 o'clock, M.

"In the morning of the day of the operation, during a paroxysm of coughing, the stone was heard forcibly driven to the upper part of the trachea two or three times, conveying the idea of a light clicking sound at the upper part, and a duller sound at the lower part of the trachea. The boy complained of the usual pain at the upper part of the trachea after the fit of coughing was over. This freedom of the stone in the trachea gave reason to hope that there would be little difficulty in finding it; in short, that it was altogether probable it would be expelled from the trachea the moment a sufficient opening should be made.

"The operation was performed in the presence of Drs. Coale, Hodges, and Coolidge. The patient having been placed upon the table and etherized, he was put in position for the operation. An incision was made exactly in the median line, about two and a half inches long. The skin, fascia and fat being divided, the sterno-hyoid muscles separated, the loose cellular texture and veins being removed from the front of the trachea, and the thyroid gland pushed out of the way, the trachea being stretched and fixed by the assistants, and the wound perfectly cleansed of blood, a knife was inserted into the trachea at the lower part of the wound, and three or four rings divided by carrying the knife upward. A moment after the opening was made, the stone was thrown into the opening by a short and sudden cough, and before it could be seized by the forceps, another short cough threw it out upon the napkin. A curved conical silver tube was introduced into the trachea, to prevent the entrance of blood. As soon as all danger of this had ceased, the tube was removed, and the wound dressed with folds of linen cloth moistened with water. These were changed as often as they became dry. In the evening the wound was closed with adhesive plasters. The night was passed more quietly and comfortably, and with more sleep, than the boy had had during any one night for four months. The stone was smooth, and about the size and shape of a Lima bean. After the operation the wound healed rapidly, the patient improved in health and strength, and is now, Feb. 14th, entirely recovered."

Successful Tracheotomy for Piece of Beef Bone in the Larynx. DR. C. JOHNSTON, of Baltimore. From Extracts from the Transactions of the Baltimore Pathological Society, by W. Chew Van Bibber, M.D. (Virginia Med. Journ., April, 1857, p. 269.)

"The subject, a boy of six and a half years, in the enjoyment of perfect health, while partaking of shin soup at dinner, was observed suddenly to make a hissing noise in his breathing, which was performed with difficulty and spasmodically—and presently his rosy color changing to a dingy or leaden hue, the child's parents became alarmed for his safety, and procured the attendance of a physician."

Dr. Brewer was subsequently called, and invited the aid of Dr. Johnston.

"Dr. Johnston verified Dr. Brewer's diagnosis in every particular. The boy was suffering exceedingly from an obstacle, supposed to be a morsel of bone, lodged in the larynx, while additional embarrassment appeared to exist in the bronchia. Emetics, the feather, and shaking had already proved ineffectual; wherefore the operation already named was suggested, and it was approved of by the parents, who perceived the danger of a 'masterly inactivity.'

"No chloroform was given, of course. A strong man, sitting astride a narrow table, supported the child seated in front, and restrained his motions. An incision through the skin was now made in the median line, from the thyroid cartilage downward, for an inch and a quarter. Several prominent, turgid veins were next held carefully aside by Dr. Brewer. Dr. J. then seized the cricoid cartilage with a tenaculum, point upward, punctured the trachea with a scalpel guided by the tenaculum, and inserting a probe-pointed bistoury into the wound, cut downward, while the larynx was drawn toward the chin.

"The patient instantly was seized with a paroxysm of coughing, and discharged through the artificial aperture two long, tough masses of mucus that had doubtless been lying in the great bronchia, while the hemorrhage, which had been considerable, almost entirely subsided as respiration became free and more tranquil.

"Now that the danger of suffocation was averted, a short pause was allowed, that the child might be tranquilized. By probing the larynx, a grating substance could be felt, but the forceps could not reach it, and it was found impossible to dislodge it from the glottis by means of an elastic catheter inclosing a bent wire introduced into the mouth.

"A long silver probe was at this juncture bent into a wide curve, and a strong double silk string passed through the eye, and attached firmly below to a bit of sponge. To facilitate the manœuvre, as the neck was short, the cricoid ring was divided. Then the probe was passed upward into the mouth, and drawn out; the sponge engaged in the larynx, and finally traction upon the string over a finger passed between the fauces brought out the sponge, and with it the 'front of all offending.' It was a piece of cancellated beef bone three-fourths of an inch in length, one-half of an inch in width, and one-fourth of an inch in thickness, and is supposed to have been situated partly between the vocal cords and partly above them.

"Immediate relief followed the extraction, and the cessation of all manipulation except cleansing the wound, which was not closed; and the boy was left breathing through it as well as through the mouth.

"During the night there was fever and slight delirium; pulse 180, and respiration 60; but in the morning the pulse had fallen to 160, and respiration to 52, under the judicious management of Dr. Brewer. Digitalis, ipecac. and soda were exhibited, ice applied to the head, and iced drinks administered, and a daily improvement became evident.

"To-day, 24th December, (8th day,) the wound, which was granulating finely, was closed without inconvenience. Pulse 95; respiration 32; condition excellent—well."

Removal of a Foreign Body from the Trachea by Tracheotomy. R. E. HAUGHTON, M.D., Richmond, Ind. (Cincinnati Med. Observer for Nov. 1857.)—The accident occurred on the evening of Aug. 15th, 1856, in eating a melon, one of the seeds being drawn from the table with the juice of the melon.

"The patient was a little girl, about four years of age, just tall enough to reach the table, and applying her mouth, thus sucked the seed into the trachea. There was some spasmodic coughing at first, but after a time, the respiration was not materially disturbed. The next morning, however, there was some wheezing and difficulty of breathing, the sound of the seed striking against the sides of the trachea, as the air passed in and out in the process of respiration."

The parents of the child were prepared for an operation as the only resource, in case of urgent symptoms supervening.

"The next day arrived, being Monday the 17th of August, and the prospects and condition of the patient no better. In the evening, during a paroxysm of coughing, the seed was thrown upward, and lodged in or about the chink of the glottis, when the symptoms became rapidly worse, and Dr. Plummer, Dr. Butler (my partner,) and myself were hastily summoned to the case.

"The incision was made down to the trachea, then three or four rings were divided, freely admitting the air. There was no bleeding of importance, but the seed was not expelled. The color soon returned, and though nearly pulseless, soon rallied a little, but being late in the day and she being so much exhausted, she was quietly laid in bed and watched through the night, a silver tube having been immediately inserted through the wound for the purpose of respiration. Next morning she was as comfortable as could have been expected, and we proceeded to find the locality of the seed, and if possible remove it. The seed was lodged or impacted somewhere above the opening into the trachea, and could not be readily found. It was thought to be in the chink of the glottis, or near by, or might have been found in one of the ventricles of the larynx, but as this was uncertain, we first passed a small bougie upward to the chink of the glottis, but could go no further. This was done with the view possibly of dislodging the seed, but as yet it was not found. The next effort Dr. Butler took a pair of curved forceps of the pocket case, and passing it upward slowly through the opening in the trachea, seized the seed and brought it to the external margin of the tracheal wound, and a struggle of the patient dislodged it from the forceps as it passed down below the wound in the trachea. We then supposed it would be expelled by coughing, and she was again laid in her bed, and soon after in an effort at coughing the seed was expelled, and caught in my hand as it was thrown out. The next steps were to combat inflammation, which was done through that day and night, by the use of nitrous powders, and the tinct. verat. viride, which exerted a most happy influence. I watched her through that night, and she seemed to grow more and more feeble, her pulse rose to 140 beats per minute, and all the members of her family had consigned her to death. I gave at intervals the tinct. verat. viride, till her pulse was reduced to 60 beats per minute, and more volume and softness. From that hour she rallied and continued to improve, and the next morning I told her father she was better, and improving; he was incredulous, and would hardly believe, even through that day, that she improved. She did not breathe through the natural passages till the Thursday following, when the tube was removed and the opening closed. She improved rapidly, and the following Sabbath, one week from the time I first saw her, her parents took her on a visit to friends in the country."

Removal of a Piece of Tin from the Windpipe by Laryngo-Tracheotomy. PAUL F. EVE, M.D. (Nashville Journal of Med. and Surg., Sept. 1857, p. 234.)— A negro boy, aged three years, had, two days previously, while attempting to whistle with a small strip of *tin* in his mouth, fallen backward and inhaled it into his windpipe. The usual embarrassment to respiration, ronchus, alteration of voice, and in this case some slight hemorrhage, immediately followed. Not having been relieved by "an emetic, inversion of the body, &c.," he was sent to Dr. E. on the 11th of June. On the 13th "the larynx and the trachea were opened, and diligent search made for the foreign substance." "The larynx was twice wiped out by sponges carried through the wound and brought out of the mouth, and the trachea and bronchi carefully and cautiously explored with probes and long forceps, but nothing special detected." The operation was unusually difficult and tedious; the child being fat, the hemorrhage abundant, and the effusion of mucus so extensive, that, counting the time consumed in arresting the hemorrhage, and using the anæsthetic (equal parts of ether and chloroform) with extra precaution, he was nearly two hours upon the operating table, and yet no one could discover the foreign body.

The piece of tin (measuring $\frac{7}{16}$ths of an inch in length and $\frac{3}{20}$ths in width, with smooth surface and sharp angles and edges) was ejected through the wound, during a paroxysm of a cough, on the 15th, about two days after the operation. The slight inflammatory action, for which a mild antiphlogistic treatment had been prescribed, soon subsided. The opening was gradually closed with adhesive plaster. On the eighth day after the operation the patient was up and dressed, and the wound was healed by granulation. On the ninth day his breathing was again nearly natural, and on the tenth he returned home well.

Radical Treatment of Hydrocele of the Tunica Vaginalis. GEORGE FRIES, M.D., Cincinnati. (Western Lancet, Feb. 1857, p. 81.)—Dr. F. objects to all the usual modes of operating in this disease, including injections, and prefers the tent alone. His plan "is to firmly grasp the posterior part of the tumor, and with a common scalpel make a free incision of an inch or more into the lower and anterior portion of the sac."

"As soon as the fluid has escaped, I pass, by the use of a small spatula, a piece of linen a half or three-fourths of an inch in width, over, and spread it upon each side of the testicle, leaving the ends of the tent to project from the wound below. These tents are permitted to remain in their place from twenty-four to forty-eight hours, according to the susceptibilities of the part. Within this time, the necessary degree of inflammation being excited, they are removed. The wound is to be kept open below for the free discharge of serous, purulent, or other matter that may form. Soon as the operation is completed, I direct that the scrotum be continually bathed with a mixture of equal parts of whisky and water. To derive the full advantage of this, it is necessary to apply it constantly and see that the cloths about the parts are so light as not to interfere with the process of evaporation.

"Occasionally it has been necessary to use saline cathartics and tart. emetic, to allay febrile excitement. Sometimes an opiate has been required to allay pain and produce sleep, but in the main, I may say my patients needed but little medication.

"I have now operated in this way," says Dr. F., "in more than forty cases, sometimes on the infant a few months old, sometimes on the old man of seventy, and in several instances where the cure had been previously attempted by injection, and I have not failed in a single instance, nor have I witnessed any untoward effects but in two cases, one of erysipelas, the other from hydro-sarcocele, in which I had subsequently to remove the testicle."

DR. BYFORD, of Evansville, Ind., recommends (*Cincinnati Med. Observer*, Feb. 1857, p. 73) puncture with a lancet, and continued evacuation, as a still milder and simpler plan, which had succeeded with him in three trials. He considers two circumstances essential to success in his operation:—

"1st. That the puncture should be made in the most dependent part; and 2d, that adhesion between the lips of the wound should be broken up as often as formed, until all the fluid is evacuated and adhesive inflammation is set up. We thus establish a kind of fistule, which admits for the time a slow evacuation of the serum, and probably also allows a sufficient ingress of the air to cause a mild degree of inflammation. In all three of the cases the puncture was small and the evacuation at the first sitting was not complete. It continued dribbling away by degrees for the first three days."

Fractures of the Neck of the Scapula. L. A. DUGAS, M.D., Professor of Surgery in the Medical College of Georgia. (Southern Med. and Surg. Journ., June, 1857, p. 336.)—In a paper on Fractures of the Scapula, read before the Medical Society of the State of Georgia, April, 1857, we find two cases of fracture of the neck of this bone:—

"CASE I.—On the 7th of October, 1853, a stout negro man, about nineteen years of age, called Ambrose, and belonging to Mr. Avery, of Columbia County, Ga., was sent to me with a note from my friend Dr. H. R. Casey, who had seen the case. It seems that three weeks previously, while at work in the field, a limb fell from a tree upon the left shoulder of this man. The blow was very severe, and, upon recovering from the shock, the man found that he had entirely lost the use of his arm, but suffered excruciating pain in the shoulder, axilla, and even to the ends of his fingers. The Doctor saw him a few hours after the accident, and found him still suffering intensely and unable to move any portion of the limb, not even the fingers. No arterial pulsation whatever could be felt at the wrist, the limb was rather cool, but sensibility was not destroyed in it, for the patient would feel when pinched. There were no symptoms of concussion of the brain nor of any lesion about the head. The shoulder alone had been stricken, and this was very much swollen. Opiates were freely administered to relieve the pain, and the limb was placed in a sling."

Dr. D. diagnosticated fracture of the neck of the scapula still existing, "and thought that the paralysis was induced by injury to the axillary nerves and vessels which were jammed against the ribs by the head of the humerus, when the blow was received." In a letter to Dr. C. he briefly enumerates the symptoms observed, and recommends a plan of treatment, in the following words:—

"Evident depression of the head of the humerus below the acromion; the head of the humerus rotates under the finger continuously with the lower end of the bone, and without crepitation; the depression of the head of the humerus is reduced by pressing up the elbow; crepitation very audible, and easily felt by placing the left hand upon the shoulder, while with the right hand you seize the elbow and work it freely, so as to force the shoulder up and down. No crepitus can be induced by acting upon the different parts of the *body* of the scapula, nor upon the acromion, nor upon the clavicle. By placing your ear, with or without the stethoscope, upon the scapula, the crepitus is very loud. Now, as to the suspended circulation and paralysis, I find no pulsation in the arteries, not even as high as the axilla, although the artery can be felt with its accompanying nerve on the inside of the biceps. The limb is cold, but especially so, below the elbow. Circulation in the veins evident, but slow. The limb is insensible below the elbow, and partially so above. The ulnar nerve may be compressed behind the elbow without sensation.

"The patient says that he suffered dreadfully at first, and that the whole limb down to the ends of his fingers was much swollen, as well as that side of the chest, for some time after the injury; and that loss of motion was immediately induced. From these facts, I think myself warranted in the inference above indicated, and also in the belief that the vessels have suffered so much from the contusion as to obliterate the axillary artery.

"It is now three weeks since the accident—what is to be done? Suspend the elbow with a handkerchief sling, such as I advise in fractures of the clavicle, so as to keep the fractured edges in contact, and to relieve the axillary nerves from compression. Give electric shocks daily to the limb, passing the fluid from the back of the neck down to the fingers. This stimulation of the nerves may possibly be useful. Let the man take exercise to brace the system."

"*Remarks.*—I should here observe," says Dr. D., "that when I saw the patient I could not feel the coracoid process with sufficient distinctness to act upon it as advised by Sir A. Cooper. Yet the whole chain of symptoms was sufficiently characteristic to leave no doubt as to the true nature of the case. The head of the humerus was depressed to such a degree, as to rest upon the axillary plexus, but could be easily forced up into its proper position; it rotated *continuously* with the shaft of the bone, and without crepitation; crepitation was easily felt by forcing the elbow up and down so as to bring the fragments against each other. Neither the clavicle, the acromion, nor any portion of the *body* of the scapula was broken. The seat of fracture could only be in the surgical neck of the scapula.

"The lesion of the axillary artery and nerves here noted deserves especial attention, for I am not aware that it has been mentioned by any author in connection with this accident. It is true, that some of them allude to the disability sometimes experienced in the use of the limb, and which may even lead to loss of motion in neglected cases; but, nowhere do I find any intimation of the sudden production of paralysis, nor of the obliteration of the artery so remarkable in this case, and so evidently caused by the immediate injury done to the nerves and blood-vessels of the axilla."

"CASE II.—In December last, (1856,) Mr. R. W. Daniel, of Jefferson County, in this State, brought to me a negro man between fifty and sixty years of age, who, in the month of March previous, while felling trees, was stricken down by a limb. The blow was principally sustained by the right shoulder, and he immediately lost the use of his arm and fingers. The physician who saw him reports that no pulse could be felt at the wrist at his first visit. My examination of the case, nine months after the accident, revealed the following state of things:—

"The clavicle had been broken at about two and a half inches from its acromial extremity, but the fracture was united, the sternal fragment overlapping the other. The acromion process had also been broken at its junction with the spine of the scapula, and an uneven union had taken place. The connection between the acromion and the clavicle appeared to have sustained some injury, as it was enlarged and uneven. The shoulder drooped so much as to resemble very much at first sight a dislocation downward. The deltoid was flattened, and the head of the humerus could not be found in its proper place, unless forced up by acting upon the elbow, by which means it could be readily replaced, but would again immediately fall upon releasing the elbow, and permitting the limb to hang down. The coracoid process evidently followed the upward and downward movements of the humerus. No crepitus could be detected by rotating the humerus when hanging down, but it became very audible when the elbow was forced up and then moved in different directions. The elbow could be placed against the chest while the fingers rested upon the sound shoulder, without any difficulty, so as to establish conclusively that there was no dislocation of the humerus, according to the principle I have established for some years back. (See *Southern Med. and Surg. Journ.* for 1856, p. 131.)

"The patient still suffered almost continual pain along the arm down to the fingers. He represented his sufferings as sometimes excruciating. These were somewhat relieved by forcing up the head of the humerus. He was entirely unable to move any muscle from the shoulder down, and he said that his limb felt benumbed, especially from the elbow to his fingers. He could, however, feel when pinched at any point of the surface. No pulsation whatever could be felt in any of the arteries of the limb, and the temperature of the skin was lower than that of the other arm. The pectoralis major, the muscles of the scapula, those of the shoulder, and indeed of the whole limb, were very much atrophied. The man's general health had suffered from long-continued pain and want of accustomed active exercise.

"The only prescription made in this case was, that the humerus should be well forced up and sustained in this position by means of a sling bandage carried beneath the elbow and well secured.

"Dr. James Bell, who lives in the neighborhood, informs me in a letter, (dated 18th March, 1857,) that the patient has been using the sling since I advised it, that the shoulder appears to be a little fuller, but that he still has no use of his limb, and occasionally suffers extreme pain in the wrist. His fingers are dwindling away and becoming stiff.

"*Remarks.*—It will be observed that, with the exception of the fractures of the clavicle and acromion, this case presents a striking analogy to the one just preceding. In both cases the injury resulted from the fall of a tree, in both instances the blow was followed immediately by paralysis and cessation of circulation in the arterial trunks, and in both the injury to the nerves and blood-vessels has persisted. Both have derived some relief by the support given to the limb, but they still suffer more or less. In neither case was a retentive bandage applied soon enough to promise union of the fragments, and none has taken place. Both being ignorant and heedless negroes, have doubtless been more or less remiss, in proper attentions to the application of the bandage, and this may account in some measure for the persistence of pain. Would a timely application of suitable bandages have allowed the nerves and vessels to recover from the severe injury inflicted upon them? The question cannot be satisfactorily answered without additional facts and observations.

"The deplorable condition of these men, who have not only lost the use of an arm, but are also subject to harassing pains, which may continue indefinitely, would seem to demand at our hands some measure of relief. Unable to think of anything better, the propriety of amputation has presented itself to my mind as perhaps justifiable under the circumstances.

"By removing the weight of the limb which is continually pressing upon and chafing the nerves, it is probable that the pains with which these patients are annoyed would cease. The usefulness of the limb being irrecoverably lost, the only objection to amputation, since it may be done without pain under the influence of anæsthesia, would be its danger to life. This danger would of course be greater in amputation at the shoulder-joint, than if it were performed at the insertion of the deltoid muscle, and the latter would probably answer the indication. Amputations in the upper portion of the arm are so rarely fatal in this section of country that the patient might well take the risk for the relief, especially when we consider that the change from a life of laborious exercise to one of even painless inactivity is in itself not without danger."

Two Cases of Recovery from Fracture of the Spine, with Remarks on this Fracture. FREDERICK D. LENTE, M.D., Surgeon to the West Point Foundry. (American Journal of the Medical Sciences, Oct. 1857, p. 361.)

"CASE I.—Barney McGuire, aged about forty, of ordinary health, a 'helper' in the foundry, fell a distance of twelve or fifteen feet while at work on the 9th July, 1853, striking on his back. I did not see him until about four hours after the accident, when I found him in the following condition—he was lying on his back in bed, his countenance pale and indicating great anxiety and prostration, intellect perfect; pulse rather feeble; stimulants had been already administered; was complaining of severe pain in the dorsal region, and 'numbness' in the lower extremities. Had not passed his water since the accident. There was complete paralysis of motion in the left limb, and almost complete in the right, being just able, with great difficulty, to flex the knee slightly, and to 'stir the toes.'

"Upon examining the back, the only point at which he complained of pain, I found a considerable projection at the situation of the lower dorsal vertebræ; upon pressing upon which, patient complained of great pain and soreness, so that it was difficult to make out whether it was due to extravasation, or to injury of the bones. He was immediately cupped over this point, and directed to be kept as quiet as possible in bed. After the cupping, a little power of motion in the right leg was gained, and he complained of a pricking sensation in both limbs. Paralysis of sensation was evidently less. His urine was also drawn off."

We have no room, unfortunately, for the details of the progress and treatment of this case. There is nothing unusual in the symptoms, except, perhaps, an irritability of the bladder, which subjected the patient to great suffering when the urine was allowed to remain longer than six hours undrawn. Sensibility, power of urinating, and a limited amount of motive power, gradually returned under the use of strychnia internally, and the application of electro-magnetism locally; the effect of the strychnia being very decided.

"CASE II.—This patient, a strong, healthy young man, aged about twenty, an apprentice to a tinman, was stepping from the roof of a house to a narrow scaffolding below, when he lost his balance; finding that he was about to pitch head foremost to the ground, a distance of about thirty feet, he sprang forward, and alighted first on his feet, and then received the force of the concussion on his seat. The ground was firmly packed clay and gravel, yet the force was so great that his buttock made a distinct depression. He was taken up pale, exceedingly prostrated, and almost senseless; he soon, however, recovered to some extent. It was found immediately that he was completely helpless below the hips, and he was taken home on a cart.

"Upon a thorough examination of the patient, after having him placed on a bed, and after reaction had set in, there was found to be complete paralysis of *motion* of both lower extremities. Paralysis of *sensation* was complete on the *right* side, from a little below the crest of the ilium downward; on the *left* side the paralysis of sensation was not so complete. Paralysis of the *bladder* complete. Upon pressing along the spine, no pain was complained of until the lumbar region was reached; at about the middle of this, the tenderness was very great, but there was no perceptible irregularity. The patient remained under my care for about two weeks, and was then removed on a litter to Orange County, where his parents reside; for the further history of the case, and its treatment, I am indebted to the kindness of his physician, Dr. J. H. Thompson, of Goshen, whose own language I shall preserve, as far as possible, in continuing the case."

This, also, we are compelled to omit; and must confine our further quotation to the first paragraph of the concluding remarks; our object being to note the fact of *recovery*, or, rather, *survival, with partial recovery*, in both cases, and the probable active remedial agent,—strychnia.

"There are several notable features in the above cases, upon which it may not be out of place briefly to remark. The fact that, in both cases, the muscular power was greatest in the limb having the least sensibility, in one no sensibility at all; the long-continued use of *nux vomica* and its alkaloid, and its undoubted efficacy in both cases, is a feature also worth noting. I believe so decided evidence of the good effect of this agent in paralysis from injury has seldom been observed or recorded. The most important point, however, is the recovery of two cases of complete fracture of the spine, whether this result be attributed to the treatment at all, or to the powers of nature, in resisting and repairing the effect of severe injury, or to both. This is a point of considerable practical importance. Complete fracture of the spinal column has almost universally been regarded by authorities, as will be seen by the references at the beginning of this article, as necessarily fatal. In consequence of this, no special efforts are usually made with a view of curing or partially curing the case, or of prolonging life until the recuperative power of the system may step in, and assist us in alleviating at least the wretched condition of the patient.

Fracture of the Pelvis during Pregnancy. J. WHITAKER, M.D., of Lewistown, Niagara Co., N. Y. (American Journal of the Medical Sciences, July, 1857, p. 283.)—On the 18th of December, 1856, Mrs. W., then in the seventh month of gestation, informed Dr. W. that she had fallen the day before, "slipping down a pair of steps, and striking astride the edge of an open upright barrel." She complained of excruciating pain in the left pubic region on the least motion. He found an oblique fracture of the body of the left os pubis, with but little displacement, and no lesion of the bladder or rectum, and no positive attempt at miscarriage.

"A roller bandage was applied around the pelvis, opiates were administered, and the urine drawn off for three days by means of the catheter. No bad symptoms supervened, and in six weeks the patient was able to walk about the room. On the 6th of March inst., she was delivered, after an easy labor, of a healthy female child, weighing ten pounds. The fracture was, of course, re-opened, and I was not surprised in seeing symptoms of peritonitis present themselves; these were promptly met by blood-lettings, and the exhibition afterwards of calomel and opium. The inflammation yielded kindly, and I am happy to state that at this date the patient is doing exceedingly well, and will be up in a few days."

Fracture of the Neck of the Thigh-bone. R. D. MUSSEY, M.D., Professor of Surgery in the Miami College, Cincinnati, Ohio. (Amer. Journal of the Medical Sciences, April, 1857, p. 299.)—The object of this paper is to describe, and illustrate with accurate engravings (nineteen in all) of the specimens, a number of cases of intra-capsular and extra-capsular fracture of the neck of the femur, in three of the former of which the author thinks that the fact of bony union is fully demonstrated. The histories of five of the cases are given in detail. The first case is one which has long been familiar to many surgeons, abroad and at home, as Dr. Mussey has been in the habit of showing the specimen, with various success as he states himself, to every distinguished authority with whom he met.

"In the year 1830, I showed this to Messrs. Roux and Amussat, and some other professional gentlemen in Paris; they regarded it as a fair specimen of bony union of intra-capsular fracture. In London, I also showed it to Mr. Lawrence, Mr. Travers, Mr. Stanley, and Dr. Hodgkin, who was then Curator of the Museum at Guy's Hospital. These gentlemen were interested with the specimen, and considered it as a satisfactory example of bony union within the capsular ligament. On my presenting it for inspection to Sir Astley Cooper, he remarked 'This bone never was broken.' I said, 'Sir Astley, please to look at the interior of the bone.' He separated the two halves, and said, 'This does look a little more like it, to be sure; but I do not think it is wholly within the capsular ligament.' It is well known that Sir A. Cooper, for some years, had taught the doctrine that bony union does not take place in the intra-capsular fracture. His views, among the surgeons of Great Britain, were extensively admitted as correct.

"At Edinburgh, I showed it to that distinguished surgeon, John Thompson, whose work on inflammation had given him extensive notoriety. On carefully inspecting it, he declared, 'upon his truth and honor,' that it had never been broken. An opinion had prevailed for some time among surgeons, that in old persons the head of the thigh-bone is liable to sink below its ordinary level, with more or less shortening of the neck; which occurs in certain morbid conditions without the aid of mechanical violence. Mr. Thompson regarded this as an instance of that kind of change.

"After returning to America, I obtained the right thigh-bone from the same skeleton. Fig. 3 [p. 301 *Amer. Journ. of Med. Sciences*, April, 1857,] gives a very correct delineation of the head, neck, and upper part of the shaft of this bone. Between this and the other specimen the difference is very striking. The neck of this exhibits the ordinary angle with the shaft, and there is no depression of the head, and no mark across the neck.

"The professional gentlemen of our country who have examined these specimens, unhesitatingly pronounce this to be a case of union by bone of intra-capsular fracture."

These histories, and Dr. Mussey's discussion of them, as well as his representations of the specimens, are so interesting that we regret our inability to quote more largely from his paper. It is the fruit of more than thirty years' experience and careful study in an extended field; and is, therefore, in addition to its practical importance, entitled to unusual scientific authority.

We have room only for one short extract which may indicate his surgical creed upon this long-vexed question. It has, at least, the advantage of the positive side, and the merit of hopefulness.

"All, then, that is required for the bony reparation of fracture, the constitutional health being good, is the undisturbed apposition of the broken surfaces. Thus, in those forms of extra-capsular fracture in which the neck of the thigh-bone is driven into and firmly impacted in the cancelous texture of the great trochanter, osseous union follows independently of callus; but when there are several fragments which are exposed to motion, callus steps in to hold them steady until the injury is repaired. When a fracture lies within the capsule of a joint, callus is not admitted there, as it would abridge or destroy the natural motions of the articulation: and the work is done by a flexible fibrous bond of union, when the broken surfaces are too far asunder, or have too much mobility for bony solidification. Is not all this as it should be, and does it not afford proof of intelligence and wisdom behind, giving direction and guidance to these processes?"

On Intra-Capsular Fracture of the Cervix Femoris. Inaugural Thesis. JOHN G. JOHNSON, of Mass. (N. Y. Journal of Medicine, May, 1857.)—Dr. Johnson takes the negative side of the question as to bony union of intra-capsular fracture of the femur, and devotes twenty-five pages to an elaborate and well-conducted attack upon "all the cases of supposed osseous union." The concluding paragraphs may serve to show the tone and course of his argument.

"All of them are defective in points of great importance; no one of them places the question beyond a reasonable doubt, and it should be remembered that these are the choice specimens of all Europe and America.

"There is a single point more worthy of notice; it is the extreme difficulty there appears to be, in all these specimens, of deciding whether they are intra-capsular, or only partly within. The mere fact that a surgeon of such eminence as Professor Mussey should have been misled, and should have been so deceived as to take a specimen across the Alantic, to convince Sir Astley Cooper of the possibility of ossific union of intra-capsular fractures, by whom it was conclusively shown that he was in error, is sufficient to prove the difficulty of deciding on these specimens. All such specimens should be preserved in the wet state with the capsule still attached, when there could be no doubt of their character.

"The argument may be thus summed up :—1. It is absolutely impossible to form a certain and unmistakable diagnosis of all these fractures during the life of the patient. 2. That the probabilities are all against union by bone, from lack of nourishment to the fractured parts of the head, from impossibility of perfect rest, and from synovitis. 3. The argument from the analogy of fractures of the patella, olecranon, etc., is an argument against, instead of for, osseous union. 4. Cases where every circumstance was favorable to union, if any fractures of this kind could unite, yet which failed to unite. 5. The cases given to prove this union not having proved it.

"The *treatment* of these cases is obvious. It has been shown that a positive diagnosis cannot be formed. It may be a case of those kinds which do have a bony union. The patient is entitled to the benefit of this chance. If his age and health will permit, the straight splint should be used; while, at the same time, the surgeon should protect himself, by showing the patient and his friends what an unfavorable result there may be. If the fracture is impacted, it should by all means be kept in the impacted state, and all attempts to extend the limb to its proper length should be abstained from.

"If the patient is past the prime of life, or of enfeebled constitution, then the double inclined plane splint should be used; and if the patient cannot bear that, then simply let the limb rest over a pillow."

Ununited Fracture successfully treated. Dr. JOSIAH CROSBY. From the Report on Surgery, by Dr. G. H. HUBBARD. (Trans. of the New Hampshire Med. Society, 1857, p. 28.)

P. A., an Irishman, aged twenty-two, of temperate habits and good constitution, fell twenty feet, and broke both bones of his left leg midway between the knee and ankle. The fracture (a transverse one) was treated as usual. At the end of the third month, when Dr. Crosby first saw him, he was walking on crutches, with both bones ununited. The leg was dressed on Roe's splint, (very much like Salisbury's,) flexed to nearly a right angle with the thigh, the thigh made fast to the splint by straps, as also the leg below the knee, and the ankle screwed round so as to make firm and constant pressure against the bottom of the foot. In four weeks the dressings were removed, and union effected.

J. D., an Irishman, aged twenty-four, in perfect health and temperate habits, suffered a comminuted fracture of the humerus, just above the insertion of the deltoid muscles; a piece of the bone, quite one-third of its diameter, and one inch in length, was split from the end of the upper fragment, and drawn an inch above the fracture. Severe inflammation followed, and eventually subsided without other untoward result than non-union of the bone. Eight months after the injury there was free motion at the seat of fracture.

Resection was performed, and the fragments fastened together with gold wire, the arm being then dressed with a gutta-percha splint fitted to the arm and encircling three-fourths of the diameter of the limb. This dressing was retained about three months, when the wire was removed, the union being established. In this case the apposition was perfect; the upper end of the lower fragment presented a superficial socket; while the lower end of the upper fragment was rounded to correspond with the cavity below, both ends being covered with articular cartilage.

Mr. C. fractured his thigh, obliquely, near the middle, on the fourth of July. On the following December there was an inch and a half of shortening, and no ossific union; the patient being unable to bear much weight on the limb, and obliged to use two crutches in walking. An attempt was made to break up the ligamentous union, bringing the limb to its proper length, and then to perform Brainard's operation. The limb was accordingly dressed as for recent fracture, and extension attempted. As much power was applied as the patient could bear, and continued forty-eight hours. At this time there was no appreciable lengthening of the limb, but great pain, throbbing, and soreness were the result of the extension. This plan was then given up, and, to take advantage of the inflammation thus excited, the starch bandage was applied. The patient was next detained in bed a few weeks, and then allowed to move about on his crutches a few weeks, the limb in the mean time getting more and more strength; so that, at the end of three months, he could walk with a cane, and is now perfectly cured, except the shortening.

Mrs. B., aged twenty-five, of good health and habits, fractured her humerus obliquely, and about the middle. The arm was well dressed and carefully attended; but just four months after, when Dr. Crosby first saw it, there was very free motion, and, of course, no union. Dr. Brainard's operation was performed on the 21st of November, 1856, and repeated on the twelfth day after; in four weeks union was complete.

Ununited Fracture. Failure of two different Operations in succession. PROF. M. GUNN, M.D. (Medical Independent, February, 1857, p. 326.)

"The patient, J. G., aged twenty-four years, was a man of fine physical development, and general appearance of health. Six weeks previously to Oct. 10th, 1856, he had sustained an oblique fracture of the humerus at its middle, the obliquity extending from behind and below, upward and forward. The arm was shortened about an inch and a half, the upper end of the lower fragment protruding under the skin at the outer border of the biceps muscle. In this position union had occurred, by a material, which, though it prevented restoration of the fragments to their original position, and the arm to its proper length, admitted freedom of motion in every direction.

"Treatment.—I adopted Professor Brainard's method, and pierced the extremities of the fragments and intervening tissue repeatedly, making but one puncture through the integument. The arm was then dressed with a roller and four splints. In addition, a firm body compress was placed between the arm and body, and a broad roller passed over all, including arm and body. The forearm was supported in a sling, and thus securely dressed, the result was awaited.

"Oct. 28th. As yet no appearance of increased action in the parts—operation repeated, and the arm redressed.

"Nov. 4th. There being still no signs of reparative effort, a seton was introduced between the fragments, and the arm dressed as before.

"Nov. 17th. Still no increase of action at seat of injury. All dressings were now removed, and the seton being still retained, the arm was left to swing for three or four days, when the dressings were re-applied.

"Nov. 20th. All means having thus far failed to excite the desired action, I resolved on exsection of the intervening tissue and the extremity of each fragment, so as to bring the fresh bone surfaces together. The seat of the fracture was identical with the spiral portion of the musculo-spiral nerve, and as its normal relations were necessarily altered by the mal-position of the lower fragment, I endeavored to modify the operation so as to avoid its injury. An incision was accordingly made, commencing at a point just anterior to the insertion of the deltoid, and extending downward along the outer border of the biceps, with a slight inclination outward. The bone was reached and its section commenced with a saw, and completed with bone forceps. No vessels requiring ligature, the wound was closed with the requisite sutures and dressed, and I congratulated myself on the completion of the operation without division of the nerve. But a paralysis, complete in the carpal and partial in the digital extensors, showed too plainly that the nerve had sustained injury, undoubtedly by the bone forceps in completing the section of the upper fragment. The arm was firmly secured in softened binder's board, the edges of which approached, but did not cover the wound, and the body dressings were applied.

"Nov. 28th. Removed sutures—union by first intention except at a small point in the centre of the incision. The wound healed from this time rapidly, and soon converted the case into simple fracture. Patient's health continued good, and I confidently expected a firm union.

"Jan. 9th, 1857. Fifty days after the operation the dressings were all removed, and not only no union had taken place, but there appeared not the slightest effort at repair."

Dislocation of the Processes of the Cervical Vertebræ. EDWIN R. MAXSON, M.D., of Geneva, N. Y. (Buffalo Med. Journ., Jan. 1857, p. 479.)—A girl, aged nine, while at play, on the morning of October 27th, 1856, by a sudden turn of the face toward the left shoulder, suffered a pain in the back of the neck, became faint, and found herself unable to turn the head back to its natural position. She was immediately placed in the most comfortable position, and recovered from the faintness somewhat, until she was moved to her bed at night, when she again became faint, restless, and irritable, resting but little during the night. No improvement, but rather more complaint of pain in the neck throughout the second day. Late in the evening of the second day, in attempting to move her again to her bed, they accidentally "turned the face a little more toward the left shoulder, as they supposed, when she was severely convulsed for a considerable time; after which she became very faint, and could not bear to be much raised in bed."

Dr. Maxson saw her at this time, and found her with the head still fixed in its position facing the left shoulder. The convulsions had subsided, but more or less spasm of the muscles continued to be aroused by any attempt to move her. Passing his hand along the spinous ridge of the neck, he discovered "an irregularity,—the spinous process of the fifth or sixth cervical vertebra appearing to the right of the one below." He was now confident "that there was displacement of the processes of the fifth or sixth cervical vertebra to such an extent as to slip the transverse or oblique process, or both, of one vertebra from the corresponding process of the vertebra below; and that the transverse or oblique process, or both, of one vertebra were caught against the corresponding process below; and hence the inability to turn the face from toward the left shoulder."

After stating to her parents the condition of the child, and the danger of an attempt to replace the parts, as well as the danger of delay, he proceeded, at their request, to the reduction, which was happily effected, and is thus described:

"I grasped the head with both hands, and proceeded according to Desault's method, only I first carried or turned the face very gently a little further toward the left shoulder, to (if possible) disengage the process; then, lifting or extending the head, I turned the face very gently toward the right shoulder, when the difficulty was at once overcome, and she exclaimed 'I can move my eyes.'"

Her countenance soon acquired a more natural appearance; the faintness passed off; she rested quietly through the night, and continued perfectly well.

Complete Dislocation of the Cervical Vertebræ—Reduction on the tenth day. Recovery. DANIEL AYRES, M.D., LL.D., Brooklyn, N. Y. (N. Y. Journal of Medicine, Jan. 1857, p. 9.)—A laboring man, thirty years of age, tall and muscular, but not fat, with a neck longer than the average among men of equal height.

"On the evening of the second of October he became intoxicated; was brought home insensible, and did not recover from the combined effects of the shock and his libations until the following morning, when he was supposed by his wife to be laboring under cold and a stiff neck."

Nothing was done until Dr. Ayres was asked to examine him on the ninth day after the accident.

"With some assistance and great personal effort, he was able to get out of bed, moving very slowly and cautiously. Desiring to expectorate, he was obliged to get down on his hands and knees, which he accomplished with the same deliberation. When seated in a chair, the head was thrown back and permanently fixed; the face turned upward with an anxious expression. The anterior portion of the neck, bulging forward, was strongly convex, rendering the larynx very prominent. The integuments of this region were exceedingly tense and intolerant of pressure. The posterior portion of the neck exhibited a sharp, sudden angle at the junction of the fifth and sixth cervical vertebræ, around which the integuments laid in folds. It was difficult to reach the bottom of this angle even with strong pressure of the fingers, and of course the regular line formed by the projecting spinous processes was abruptly lost. He complained of intense and constant pain at this point, which was neither relieved nor aggravated by pressure. With difficulty he swallowed small quantities of liquid, pausing after each effort, and could not be induced to take solid food, since the first attempt to do so after the accident was followed by violent paroxysms of coughing and choking. His breathing was obstructed and somewhat labored, being unable fully to clear the bronchia of their secretion. This, however, seemed rather an effect of the tense condition of the soft parts of the neck, than the result of pressure upon the spinal cord, since he presented no evidence of paralysis, either of motion or sensation, in parts below the neck. The sterno-cleido-mastoid muscles of both sides were felt quite soft and relaxed.

"But one conclusion could be formed upon this state of facts, to wit: that the oblique processes of both sides were completely dislocated. The marked rigidity of the head seemed to preclude the probability of fracture through the vertebral bodies, and although the cartilage might be separated anteriorly, yet, the body not pressing backward sufficiently to produce paralysis of the cord, it was hoped that the posterior vertebral ligament remained uninjured; it was, therefore, determined to make an effort at reduction on the following day.

"The patient was placed upon a strong table, in a recumbent position, with a pillow resting under the shoulders, the head being supported by the hand during the administration of chloroform, of which an ounce was given before anæsthesia ensued. Counter-extension being made by two folded sheets placed obliquely across the shoulders and properly held, the head was grasped by one hand placed under the chin, the other over the occiput, and by steadily and firmly drawing the head directly backward, and then upward, an attempt was made at reduction, but failed for want of sufficient power. Dr. Ingraham was then requested to place his hands immediately over my own in the same position as before, and steady traction was again made in the same direction. Our united strength was required in drawing the head backward and upward, to dislodge the superior oblique processes from their abnormal position. When this was felt to be yielding by Dr. Cullen, (who kept one hand constantly at the seat of dislocation,) Dr. Potter was directed to place his hands under our own, still in position, and assist in bringing the head forward; at the same time the chest was depressed toward the table. The bones were distinctly felt to slip into their places; the line of the spine was instantly restored, the head and neck assuming their natural position and aspect. As soon as the patient became conscious, he expressed himself ignorant of what had taken place, but free from pain, and, in his own language, 'all right.' A bandage was arranged to support the head and keep it bent forward. He had an anodyne for two nights following, after which no further treatment was necessary, and at the end of one week he had complete control over the movements of the head and neck. Beyond the debility and emaciation immediately dependent upon protracted fasting and loss of rest, he has experienced no uneasiness since the operation. His appetite is now good, and all the functions perform their duty normally. In a subsequent inquiry, to determine if possible the cause of the accident, he states that he distinctly recollects going into a store in Atlantic Street, near the ferry, and there having angry words with an acquaintance; that he left the store and was proceeding up the street, (which is here a rather steep ascent,) when he was violently struck from behind, over the lower portion of the neck. He likewise remembers falling forward and striking against some object, but does not know what it was, nor what took place until the following morning."

Two colored lithographs, representing the appearance before and after reduction, accompany this paper, which is further enriched with practical remarks, and with a review of leading authorities on the subject.

Apparatus for the Reduction of Dislocations of the Fingers or Thumb. RICHARD J. LEVIS, M. D., of Philadelphia. (Am. Jour. Med. Sci., Jan. 1857.) pp. 62, 63. With two wood-cut illustrations.

"It consists simply of a thin strip of any hard wood, about ten inches in length, and one inch, or rather more in width. One end of the piece is perforated with six or eight holes, arranged [as in the wood-cut] lengthwise in two parallel lines. The opposite end is partly cut away, forming a projecting pin, and leaving a shoulder on each side of it. Toward this end of the strip, a sort of handle-shape is given to it, so as to insure a secure grasp to the operator.

"Two pieces of strong tape, or other material, about one yard in length, are prepared. One of these is passed through the holes at the end of the strip, leaving a loop on one side. The other tape is passed through another pair of holes, according as it may be a thumb or finger, to which it is to be applied, or varied to suit the length of the finger, leaving a similar loop. If a dislocated thumb is to be acted on, the second tape should be passed through the holes nearest the first. The ends of each separate tape are then tied together.

"To apply the apparatus, the finger is passed through the loops. The loop nearest the first joint is then tightened by drawing on the tape, which is then brought along the strip to the opposite end, across one of the shoulders, and secured by winding it firmly around the projecting pin. The other tape is tightened in a like manner, crossing the other shoulder, and winding around the pin in an opposite direction, when, for security, the ends of the tapes are finally tied together.

"By this arrangement is gained a very simple means of making powerful extension; a leverage power by which the dislocated phalanx may be made to follow the rounded surface of the opposite articulation; and a power of rotating it while extension is being made, so as to turn one of the small condyles of the luxated phalanx at a time, under the unyielding lateral ligaments of the joint.

"If properly applied, without the slightest painful constriction of the finger or thumb, this apparatus is perfectly unyielding to any force applied in reduction, and it must break rather than slip from its hold.

"The control thus given to the operator, with its ready preparation at an emergency from materials everywhere at hand, give the apparatus decided advantages over the simple traction of the 'clove hitch,' or the more expensive and complicated devices which have been used for the purpose."

Improved and Easy Method of Reducing the Backward Dislocation of the First Phalanx of the Thumb. B. CUTTER, M.D., Woburn, Mass. (Boston Med. and Surg. Journ., Oct. 1, 1857, p. 172.)—After referring to the well-known difficulty in reducing this luxation by extension, and mentioning the various instruments and expedients for maintaining traction, Dr. Cutter proposes "a better way," which, for several years past, Prof. Dixi Crosby, of Hanover, N. H., has been accustomed to describe and recommend.

"Prof. C. remarks, in his lectures, that he has never failed in the few cases which have occurred in his practice, although in several instances all other methods usually adopted had been tried without effect; and, in his opinion, this method is equally applicable to similar dislocations of all the phalanges. I have verified this last opinion in one instance, the only one I have met with.

"The first case occurred about six years since; the subject, an Irish lad, about eight years old, with his *left-hand thumb* dislocated. After some ineffectual attempts to reduce it by his parents and neighbors, I was called. Having a general idea of Dr. Crosby's method, I proceeded to put it in practice. I placed the patient in a common chair, and took a seat in another at his side, both of us facing the same way. An assistant sat behind us, to hold the boy's elbow fixed. I then took hold of the metacarpal bone with my right hand, my forefinger passing between his thumb and forefinger, and my thumb resting on the top of the metacarpal bone, with its end touching the dislocated end of the phalanx. With my left hand I tipped the phalanx back until it stood perpendicularly on the metacarpal bone; then pressing the phalanx forward by the end of my right thumb, it was readily carried by flexion into place, and the joint restored to its natural condition. The manipulation was performed in a twentieth part of the time taken to describe it. A bandage was applied for a few days to prevent displacement, and some evaporating lotion to subdue inflammation.

"About the same time another similar accident occurred in an adult, an officer in the Customs, which in my absence was treated according to the same principle by my friend Dr. Rickard, and with equal success.

"The next case, a young girl about thirteen years of age, had the first phalanx of the *right* thumb dislocated on the back of the metacarpal bone. As she had suffered considerably in the attempts to reduce the dislocation, she and her friends insisted on using some anæsthetic, and, although I considered it unnecessary, she was gratified. As it was the right thumb that was injured, I seized it with my left hand, the forefinger underneath and my thumb on the back of the metacarpal bone. With my right hand I tilted up the phalanx until the end of the joint rested upon the metacarpus; then pressing it forward with the end ot my left thumb, I flexed the phalanx into the line and place with ease."

In a more recent publication of this paper, with additions, in the *Am. Journ. of Medical Sciences*, (April, 1858,) there is appended a note from Dr. Crosby, in which he states that he has practiced and taught this method since 1827. Dr. Cutter's paper is illustrated with marginal diagrams.

Cases of Dislocation of the Femur reduced by Manipulation.—CASE I. *On the Dorsum Ilii.* CHAS. H. BAKER, M.D., Genesee Co., N. Y. (Buffalo Med. Journ., March, 1857, p. 624.)—A lad, seven years of age; reduced at once, without anæsthesia, three hours after the accident.

CASE II. *On the Dorsum Ilii.* T. G. MCELBRIGHT, M.D., Nashville, Ohio. (Western Lancet, April, 1857, p. 255.)—A lad, aged seven years; anæsthesia produced with equal parts of ether and chloroform; reduction effected by Reid's method, within thirty seconds.

CASE III. *On the Dorsum Ilii.* C. E. ISAACS, M.D., Brooklyn. (N. Y. Journ. of Med., Nov. 1857, p. 418.)—A boy, aged eight years, injured two days previously; head of femur found to be in sciatic notch. Chloroform having been given, dislocation was restored in less than half a minute by manipulation according to Reid's method.

CASE IV. *On the Thyroid Foramen.* Professor C. S. BLACKMAN. Reported by N. J. SAWYIER, M.D. (Western Lancet, June, 1857, p. 419.)—J. T., aged twenty-seven, fell some thirty feet, striking with his left side on a plank floor. Reduction effected under chloroform, in eight or ten minutes, about twenty-four hours after the accident, by the usual process in Reid's method, except that the adduction across the sound limb was carried to a greater extent than in dislocation on the os ilii.

CASE V. *On the Thyroid Foramen.* R. T. BRODIE, M.D., Assistant Surgeon, U. S. A. (Charleston Med. Journ., Sept. 1857, p. 626.)—A boy, aged fifteen, dislocated his thigh in wrestling, an hour previously. Chloroform was administered by inhalation to the extent of half a fluidounce before he became insensible. Reduction was then effected at once by manipulation.

CASE VI. *Into the Sacro-Ischiatic Notch.* S. R. HENRY, M.D., of Burlington, Iowa. (N. A. Medico-Chir. Rev., Nov. 1857, p. 933.)—A very robust muscular man, aged forty. After administering chloroform, "we flexed the knee upon the thigh, and gradually elevated the latter upon the body, then bent it downward toward the other side, keeping up manipulation upon the trochanter. During its descent, the head of the bone was felt, and heard to move from the notch and take up its position on the dorsum ilii. After repeating this proceeding two or three times, it slipped into the acetabulum."

CASE VII. *Reduction by Manipulation of a Femoral Dislocation of six months' standing.* MARTIAL DUPIERRIS, M.D., Havana. (N. A. Med.-Chir. Rev., March, 1857, p. 29.)—A cooley, aged about sixteen, arrived from China in a feeble sickly condition, having been disabled throughout the voyage, by a fall which dislocated his hip before embarkation.

"The permanent contraction of the surrounding muscles, almost universally present under similar circumstances, was wanting in this case; as before stated, they were all in a flaccid condition, except the great gluteal, which was painful to the touch. The limb was somewhat more emaciated than its fellow of the opposite side, owing, doubtless, to the obstruction to the circulation and enervation produced by adhesions of the vessels and nerves in their unnatural situations. No anæsthesia was attempted on account of the feeble condition of the patient. Extension was tried without effect, except to create excruciating pain. The next day the reduction was undertaken by flexion, as the safer and at the same time more available procedure.

"The patient being placed upon his back, and the trunk of the body made steady by assistants, with the left hand I grasped the upper part of the leg, placed the right hand upon the head of the thigh-bone in the iliac fossa, and then proceeded to flex the leg upon the thigh, and the thigh upon the pelvis. By this movement the great gluteal muscle was relaxed, and the head of the bone advanced, while with the right hand I directed the latter toward the cotyloid cavity. As soon as I judged the head to be immediately above the centre of the socket, I extended the leg, the thigh remaining flexed at a right angle; and then using the limb as a lever, I rotated it from within outward, and at the same time extended it by making a movement of circumduction in a similar direction. When, by these procedures, the limb was brought near to its opposite fellow, a snap, audible to the assistants, and of a deeper character than is ordinarily observed in the reduction of recent dislocations, indicated the return of the bone to its natural position; a fact which was further substantiated by the establishment of the original length and form of the member and the subsidence of the pain."

In spite of precautionary measures, the displacement was reproduced on four successive days. After this, however, the head of the bone retained its place; passive motion was daily employed, and all suffering ceased. He gradually improved, until, in a few months, he was entirely restored. The paper concludes with some useful practical remarks upon the conditions recognized as favorable to the operation for reduction of old dislocations.

Dislocation of the Femur on the Dorsum Ilii. Reduction by extension with pulleys, sixty-four days after the Accident. THOS. CAMPBELL, of the N. O. School of Medicine. (N. O. Med. News and Hospital Gazette, Jan. 1, 1857, p. 656.)—W. L. D., aged thirty-four, stout and healthy, entered the Charity Hospital, November 10th, 1856, for an affection which Drs. E. Martin and Choppin recognized at once to be a dislocation of the femur upward on the dorsum ilii. A rude attempt at reduction had been made, under the patient's direction, at the time of the accident. A second attempt was made a few days later, but without success; after which he was treated eight weeks for fracture of the neck of the femur.

On the 14th of November, Drs. E. Martin and Choppin had the extending and contra-extending bands and pulleys applied in the usual way. Extension, slow and gradual but steady, was made, until the head of the bone approached the acetabulum, when Dr. Choppin rotated the limb inward, and the head of the bone slipped into the socket. The time consumed in effecting this result was about one hour and a half.

Dislocation of the Head of the Tibia forward upon the Thigh-bone. PROF. S. D. GROSS. (N. A. Med.-Chir. Rev., March, 1857, p. 298.)—A very large, fat woman, married, aged forty-eight years, fell, suddenly, with her whole weight upon her knee. Dr. G. saw her four hours after the accident.

"The knee, which was very painful, and a good deal swollen, especially on the inside, appeared to be unusually wide, from side to side, a circumstance which was partly due to the tumefaction of the soft parts. The leg was one inch and a half shorter than the opposite one, and in a straight line with the thigh. The patella had sunk behind the head of the tibia into a sort of hollow which gave to the front of the joint a sort of flattened appearance. Upon grasping the bone, however, with the thumb and fingers, it was easily drawn forward, leaving a remarkable vacuity behind, in consequence of its distance from the inferior extremity of the femur. The condyles of the thigh-bone lay in the popliteal space, posterior to the head of the tibia, where they formed a large prominence, more distinct on the inside than on the outside, and situated, as it were, in the upper and back part of the leg, the muscles of which were unusually tense. The head of the tibia lay in front of the condyles, where its outlines could be easily traced with the eye and finger. Above this bone, as already stated, was the patella, with its ligament, and the tendon of the extensor muscles, forming a broad, thick cord in front of the thigh-bone, from which it was removed more than two inches. The leg was easily drawn away from its fellow, but could not be carried inward, showing that there was extensive rupture of the internal lateral ligament. There was no contusion of the soft parts nor any discoloration of the integuments.

"Chloroform having been administered, a stout lac was applied to the upper part of the thigh, and confided to an assistant, to make the requisite contra-extension, while extension was made by another assistant grasping the foot, the limb being in an extended position. Placing, now, my left forearm behind the knee, and requesting the aids to pull gently and steadily, I suddenly, with my right hand, bent the leg backward, and thus in a few seconds effected the reduction; the bone slipped into its proper situation with a distinct 'snap.' The limb being placed in an easy position, cold cloths were applied to the knee, and a grain of morphia administered to allay pain and prevent spasm.

"No untoward symptoms appeared after reduction. The patient kept her bed for nearly a fortnight, and medicated lotions were applied, after the first twenty-four hours, to moderate and subdue inflammation. Purgation and light diet were also enjoined. In due time passive motion was instituted; the limb was frequently bandaged; and in less than a month from the accident, the woman was able to walk about the house with the aid of crutches. The joint, however, remained weak a long time, and even now, several years after the occurrence of the injury, the slightest fatigue is attended with temporary lameness."

Paracentesis Thoracis. H. I. BOWDITCH, M.D. (Boston Med. and Surg. Journ., June 4, 1857, p. 349.)—Dr. B. writes, in continuation of his articles published in the *Am. Journ. of Med. Sci.* (April, 1852,) and in the *Am. Med. Monthly*, (January, 1852):—

"Since my last article on thoracentesis, I have been more confirmed than ever in my belief of the importance of this operation as a remedial measure, to be used *not as a last resource*, but like any other simple remedy, if necessary, at any period of the disease. I still use the exploring trocar, although, in some instances, where there has been a tendency to a re-accumulation of fluid, I have used a larger instrument.

"Since that article (October, 1853) I have operated on thirty-seven persons, and have punctured sixty-one times, either with relief or great relief, in all but one. This person was very intemperate in her habits, and was stupid with liquor when I operated; but the dyspnœa was so very great as to threaten immediate death. She was relieved temporarily; but sank about twenty-four hours after the operation. With this exception, in not a single instance was there any untoward result."

He then gives the details of a few of the more interesting cases, and thus continues:—

"I have thus given you the more interesting of my recent cases. The notes are very brief. The records I have of them are ample. In a word, since April 17th, 1850, I have operated upon sixty-two individuals, of both sexes and all ages. I have punctured one hundred and eleven times. I know of nothing in practical medicine which has afforded me more satisfaction than this simple operation. I use designedly the expression—practical *medicine*, in contradistinction to surgery. The perfect simplicity of the operation, to one satisfied of the correctness of his diagnosis, allies it to venesection or vaccination. I am well aware that many will wonder, and some perhaps will scoff at this classification. To such I would say—Do not theorize on your fears; *try the operation*, and then you can judge more clearly. You will find that, as performed in these cases, (viz., with the exploring trocar,) it is, 1st, as a general rule, less painful than a blister; 2d, that (if I may judge from my cases) it *never* does harm; 3d, when fluid is obtained, it *always* gives relief, either temporary or permanent; 4th, that very often it is the chief, if not the sole means capable of relieving severe symptoms, and even of saving life.

"If these statements are true—and I am as convinced of their truth as I am of anything in my whole medical experience—I am justified in asserting, that a physician does wrong and acts foolishly who allows any patient to suffer months or years of misery, or even death itself, from pleuritic effusion, at any age—from any cause and with any complications—without at least *a trial of thoracentesis*. I write thus strongly because I fear that surgeons of even the highest reputation still shrink from performing this operation. This fear, I presume, is owing to their considering it as similar to the operation laid down in all, or almost all, of their own manuals. From that operation they ought in most cases to shrink. That which is here indicated is of a totally different character, and is, so far as my experience goes, harmless."

Lithotrity. Dr. C. S. FENNER, of Memphis, Tenn. (New Orleans Medical and

Surgical Journal, vol. xiii. No. iv., p. 448.)—A case of stone in the bladder is here reported "simply as an instance of the facility with which, in favorable cases, small stones may be broken and passed off by piecemeal, and the necessity for a painful and dangerous cutting operation obviated." A negro, about thirty years old, unusually intelligent, and, except a valvular disease of the heart, of good general health, had suffered with symptoms of stone for ten years; he was at times incapacitated for field-labor, and had repeatedly solicited his master to have him cut.

The stone was seized, and broken into fragments, with a medium-sized lithotriptor of Heurteloup with rack movement, and two or three of the larger pieces were then crushed. The whole operation did not last five minutes; blood was lost, and the pain felt was trifling. After having passed fragments of stone for two days he felt entirely relieved, and the sound gave no indication of any foreign body in the bladder. He slept without waking throughout the third night, which he had not done for years. On the third day he went to the field and performed his accustomed amount of labor. From that time, "early in November," until his death, which happened "late in the spring from a disease of the heart," he had no symptoms of the stone.

Extraction of a piece of Lead-pencil from the Bladder by a small Incision through the left side of the Perinœum. S. D. GROSS, M.D., Prof., &c.—A farmer, aged thirty-nine, while introducing into his urethra, according to his habit, in order to facilitate the flow of urine, a piece of common lead-pencil, allowed it to slip into the bladder. The usual irritation followed, and some twenty-six days subsequently he presented himself to Dr. Gross, in Philadelphia, having travelled from his home in Wellington County, Canada West. The pencil was readily detected with the sound. A cathartic was ordered, and the next day an unsuccessful attempt was made to extract the foreign body through the urethra.

The lateral operation of lithotomy having been determined on, it was performed, on the morning of the third day after his arrival,—

> "In the usual manner, except that the incisions were very small; the pencil was found to be behind the pubic symphysis, and was removed without the slightest difficulty. Very little blood was lost. Urine had ceased to flow from the wound on the sixth day. Some febrile irritation occurred at the end of the first week, but soon disappeared under soothing treatment. He left for home on the nineteenth day after the operation."

The wound was nearly cicatrized, and all the urine came away through the natural passage. The vesical distress had subsided, and there was but little pain in urinating. The urine was sometimes high colored, and contained a small quantity of sabulous matter. In all other respects the patient was entirely well. The pencil, which was slit in half, the part containing the lead having gotten into the bladder, was two inches and five-eighths in length and was conical at one extremity. It was coated with a deposit which weighed about one drachm, and consisted of a small quantity of uric acid, the rest being triple phosphate.

Case of Lithotomy for numerous calculi, with a sequestrum of bone in the neck of the bladder. Cured. D. B. VAN TUYL. (Medical Independent, Nov. 1857.)

The operator reports this case as an instructive and striking instance of the fact, long since demonstrated, that "excessive and long-continued exercise of any particular set of muscles will cause inflammation of the bony tissue to which such muscles have their attachments; and that such inflammation may result in hypertrophy, caries, or necrosis, with a train of concomitant ills such as human flesh is seldom heir to."

The important points in the history of the case are sufficiently apparent in the writer's summary, which is here appended:—

"Here we have the case of a man who, from his own account, has suffered with the worst forms of rheumatism for more than twenty years. But, *in reality*, it is not probable that he has ever been affected with that disease in the slightest degree.

"Mr. L. is a man of five feet and six inches in height, with an average weight of only one hundred and twenty-eight pounds; but he is a man of great muscular strength. When he was twenty years of age, he supposed he was the strongest man, *of his weight*, in New England. His muscular power, therefore, was equal to the task of running five miles, or perhaps a much greater distance. But the bones which were required to sustain the shock of the repeated contractions of those muscles which are most powerfully exercised in running were not equal to their part of the performance. The parts to which those muscles were attached became inflamed to a degree which gave the disease the *appearance* of rheumatism; and what the result would have been had he not exposed himself to the fatigue of that twenty mile walk can only be conjectured. But that additional irritation hastened the work of destruction. The inflammation, which had been of a subacute character, at once became active and violent, and exfoliation of the anterior processes of both ossa ilii, also a part of the tuberosity and ramus of the left ischium, and a part of the descending ramus of the left pubic bone, was the result.

"The sores on the lower part of the abdomen, as we learn, continued to discharge, one three, the other thirteen years; but as soon as the last piece of bone was extruded, the ulcer healed. The cicatrices from those sores extend, in a crescentic shape, from the anterior superior spinous process of one ilium to that of the other. Had the real cause of these abscesses been suspected, all his sufferings in *those parts* might have been terminated at any time, simply by enlarging those sinuses and removing the exfoliations.

"But when nature, after a most protracted, painful, and unassisted labor, had brought forth a whole litter of those sequestra, *one* still remained, and that in a position which bid defiance to her best-directed efforts for its removal. This was on the internal and posterior part of the descending ramus of the left pubic bone. The exfoliations which had escaped through the opening in the thigh had doubtless come from the immediate neighborhood of this remaining one, a little lower down. But when this piece had ulcerated through the parts which covered it, it found itself, as it were, *looking into the neck of the bladder;* and had it become fully detached, would have fallen into that viscus. But remaining *in situ*, and being constantly in contact with the urine, it became a nucleus, or surface, upon which was deposited the numerous small calculi and fragments which were removed during the operation. The position of the bone was such that, in passing a catheter, (an operation which Mr. L. had performed upon himself frequently for many years,) the point of the instrument glided lengthwise along the bone; and whenever the deposit had become so great as to prove an obstruction to the free passage of the catheter, the instrument would detach the deposit, which would fall into the bladder, and there become a nucleus for still further deposit. This accounts for the great number and variety, in size and shape, of the calculi; some that had recently been detached being still perfect casts of that part of the bone upon which they had been deposited; while others, which had served for years as nuclei, had attained to considerable size.

"There were about twenty of those pieces, from the size of a pea to that of a filbert, besides a great number of smaller fragments, and a small spoonful of sandy matter."

The patient was walking about the streets in less than three weeks after the operation; and for more than a year has been engaged in his ordinary business, travelling, &c., in perfect health.

A Statistical Report of Forty-six Operations for Stone in the Bladder, with the best method of performing Lithotomy. PAUL F. EVE, M.D. (Nashville Jour. of Med. and Surgery, Aug. 1857, p. 81.) The first part of this paper is occupied with a synopsis of twenty-one cases, in continuation of a report of twenty-five similar cases which was published in the April number of the Am. Jour. of Med. Sciences for 1852.

"Since October, 1841, the date of my first operation, a period of a little over fifteen years, I have operated on forty-six cases of urinary calculi, thirty-eight of them under chloroform, without an unpleasant result from it, and have removed one hundred and sixty-six stones. The following tables will present the statistics of these cases in regard to the date, age, sex, race, residence, method of operation, number of calculi, and the result of each one.

Statistics of Forty-six Operations for Urinary Calculus.

No.	Date.	Age.	Sex.	Race.	State.	Operation.	No. of Calculi.	Result.
1	1841	8	Male.	Mulatto.	Ga.	Bi-lateral.	1	Speedy Recovery.
2	1843	6	"	White.	Ga.	"	1	" "
3	1843	3	"	Mulatto.	Ga.	"	1	" "
4	1845	3	"	White.	Ga.	"	1	" "
5	1845	34	"	"	Ga.	Lithotrity.	1	"
6	1846	24	Female.	Black.	Ala.	Vaginal Section.	1	" "
7	1847	20	Male.	White.	Ga.	Bi-lateral.	1	" "
8	1847	20	"	"	Ga.	"	1	" "
9	1848	5	"	"	S. C.	"	1	" "
10	1848	5½	"	"	S. C.	"	1	" "
11	1849	50	"	"	S. C.	"	117	" "
12	1849	6	"	Black.	S. C.	"	1	" "
13	1849	4	"	White.	Ga.	"	1	" "
14	1849	10	"	"	Ga.	"	1	Died of Dysentery when wound nearly healed.]
15	1850	12	"	"	Ga.	"	None.	Speedy Recovery.
16	1850	7	"	"	Ga.	"	1	" "
17	1851	4	"	"	S. C.	"	1	" "
18	1851	7	"	"	Ga.	"	1	" "
19	1851	7	"	"	Ga.	"	2	" "
20	1851	77	"	"	Ga.	"	3	Death in sixty hours.
21	1851	24	"	"	Tenn.	"	1	Speedy Recovery.
22	1851	5	Female.	"	Ky.	"	1	" "
23	1852	7	Male.	"	Tenn.	"	1	" "
24	1852	24	"	"	Tenn.	"	1	Death sixth day.
25	1852	65	"	"	Tenn.	"	1	Death about thirteenth day.
26	1853	3	"	"	Tenn.	"	1	Speedy Recovery.
27	1853	4	"	"	Tenn.	"	1	" "
28	1853	10	"	"	Ga.	"	1	"
29	1853	20	"	"	N. York.	Lithotrity.	1	" "
30	1854	34	"	"	Ga.	Bi-lateral.	2	"
31	1854	12	"	"	Tenn.	"	1	Speedy "
32	1854	7	"	"	Tenn.	"	1	" "
33	1854	23	"	"	Ga.	"	1	" "
34	1854	26	"	"	Ga.	"	1	"
35	1855	5	"	"	Tenn.	Lateral.	1	Speedy Recovery.
36	1855	16	"	Mulatto.	S. C.	Bi-lateral.	1	" "
37	1855	9	"	White.	Tenn.	"	1	" "
38	1855	66	"	"	Miss.	High Operation.	1	" "
39	1856	2½	"	"	Tenn.	Bi-lateral.	2	" "
40	1856	11	"	"	Tenn.	"	1	" "
41	1857	26	"	"	Tenn.	Dilatation.	1	" "
42	1857	22	"	"	Tenn.	Bi-lateral.	1	Slow Recovery.
43	1857	19	"	"	Tenn.	"	1	Speedy Recovery.
44	1857	8	"	Black.	Tenn.	"	1	" "
45	1857	61	"	White.	Tenn.	"	1	" "
46	1857	9	"	"	Tenn.	"	1	" "

"Rejecting the case of death from prevalent dysentery when the wound was nearly healed, the mortality exhibited by these statistics is 1 in 15⅓, and 35 of 46 had a speedy recovery."

Summary of the Forty-six Cases.

NO. OF CASES.	AGE.	SEX.	RACE.	OPERATION.	NO. OF STONES.	RESULT.
	27 under 15. 15 adults. 1 aged 61. 1 " 65. 1 " 66. 1 " 77.	44 males. 2 females.	40 whites. 3 mulattoes. 3 blacks.*	40 bi-lateral. 1 lateral. 1 vaginal. 1 high. 1 dilatation. 2 lithotrity.	117 in one. 3 in one. 6 in three, 2 each. † 40 in 41.	Death occurred from dysentery in one of the 27 under 15. Death in one of the 15 adults. Death in 2 of aged. 36 had a speedy recovery.
46	46	46	46	46	166	

Dr. Eve informs us that he "had not declined to operate in a single case under his care where, in the opinion of others, it ought to have been done. In one instance, a patient died a few days after being placed on the table, though no operation was attempted, and two others expired after leaving home to seek relief. I know now that I operated on two cases which were at the time beyond all expectation of a cure, and another one, it is possible, might have been relieved by lithotrity or the high operation.

"As to the best method of performing lithotomy, it is very certain, as in many other operations, that no one in particular should be adopted to the exclusion of all others. Each case is a problem to be solved best by a careful study, and the adaptation of therapeutic means to meet all its peculiarities. While perfection may not be attained by any plan yet proposed for removing stone from the bladder, that operation attended with the least risk to the patient and followed most generally with success, is the one to be selected.

"I acknowledge, in the child or boy up to about fifteen years of age, that an experienced surgeon may, with the scalpel alone, make a capital operation and obtain good results; but in a majority of cases and under ordinary circumstances, I have little doubt, when the method about to be described is understood, it will be admitted to be the best. My staff has, at the upper part of its groove, an opening large enough to admit the beak of the lithotome, and which is there so contracted as to prevent the escape of the cutting instrument until it arrives near the extremity, and has consequently entered the bladder. It acts, in other words, as a safe and certain director to the lithotome. It guides it with unerring precision into the bladder, and thus prevents the rectum being wounded, or the cutting instrument passing into the space between these two organs,—an event which has too often happened.

"I have also added a slight modification to the double lithotome cachée. I found the shoulder of it too large, especially for children, to enter freely upon the staff when in the urethra. To prevent laceration of this canal I have had two small blades put upon the shoulders, so that the instrument may cut its way into the bladder.

"In operating for urinary calculus, I make an inverted ⅄ incision in the perineum; thus, with a scalpel, beginning at the bulb of the urethra, an incision three-quarters of an inch in length is made to the median line, then the knife turned to the left, to terminate about midway between the anus and tuberosity of the ischium. A similar leg to the inverted λ is then made on the other side, but with its cutting edge turned up, and arriving at the median line, the point of the scalpel is entered down to the staff in the urethra, upon which the lithotome is now conducted into the bladder. The staff being removed, and the half-turn given to the lithotome, the blades are expanded and the bi-lateral section made in withdrawing this instrument, which will be found to correspond very nearly with the external inverted λ incision previously made in the perineum.

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* I have had only one colored patient of the West.

† In one case I failed to remove the stone. This was in 1850, and two months ago the patient arrived here, seeking relief from symptoms of urinary calculus, under which he has labored ever since I operated upon him. He is a member of the class in the Literary Department of our University.

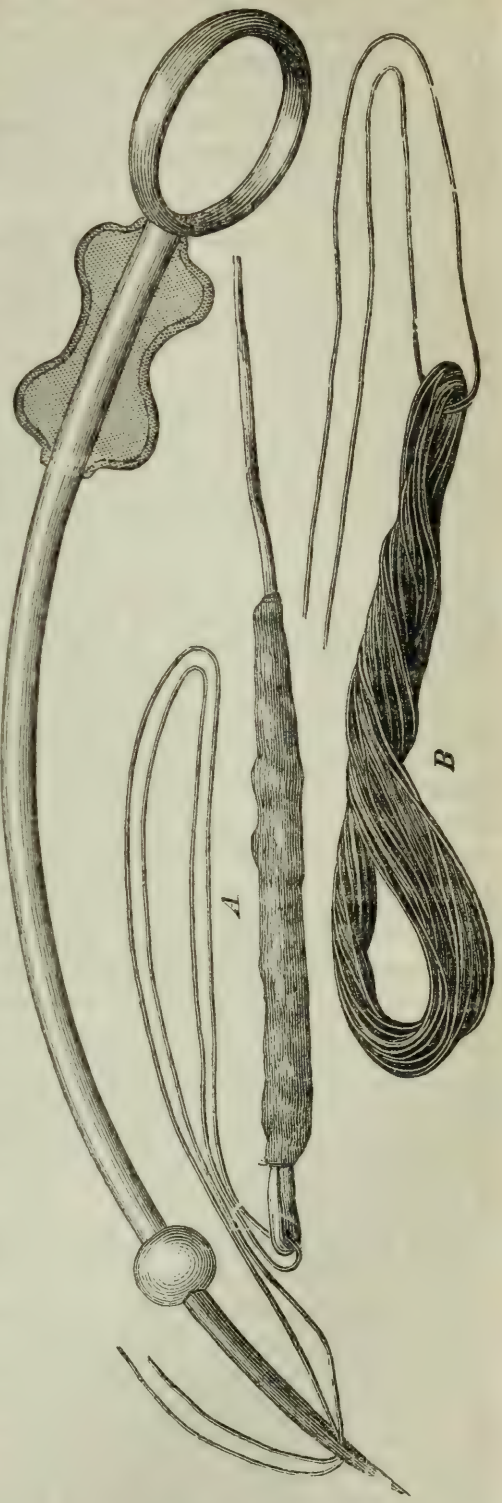
"The advantage of this external incision over the crescentic one of Dupuytren is the facility with which it may be made and the urethra opened upon the staff. I make as small an opening in the prostate gland as will permit the extraction of the stone, knowing from experience the parts may be considerably dilated by gentle persevering traction with the forceps grasping the calculus. And the only unpleasant occurrence ever met with in the treatment of cases thus operated upon, placed under my care, has been hemorrhage; and how this may be arrested I have described. The development of the vessels about the neck of the bladder and perineum in calculous patients, and the irritation created by the passage of urine over the wounded surface, will account for the special and unavoidable liability to bleeding after lithotomy."

Instrument for the Radical Treatment of Reducible Inguinal Hernia. J. W. RIGGS, of Plainfield, N. J. (New York Journ. of Med., July, 1857, p. 143.)—Dr. Riggs is here announced to have "devised an instrument for the introduction of a seton into the inguinal canal, where there is a reducible inguinal hernia, for the purpose of exciting a sufficient degree of inflammation to occlude this passage; the instrument consists of a long curved canula, containing a trocar, having an eye near its pointed extremity. To operate, the hernia must be entirely reduced, and the canula passed up, upon the finger, to the internal ring; the trocar is then thrust upward through the integument, and a seton being passed through the eye, it is withdrawn into the canula, and both are withdrawn from the canal, thus leaving the seton lying in the inguinal canal. The seton may or may not be medicated. This operation has been performed several times with complete success."

A paper, "*On the Radical Treatment of Reducible Inguinal Hernia, with the Description of a New Instrument and a Report of Successful Cases,*" has been published by Dr. Riggs (now of New York) in the New York Journal of Med. for March, 1858. This article contains a full and detailed description of the inventor's mode of operating, and a wood-engraving of his instrument, which, at the request of the senior editor of the Review, are introduced into this Report, in order to facilitate the comprehension of the mode of operating above referred to, as well as to afford a better idea of the means employed.

"*Operation.*—Before proceeding in the operation itself, the surgeon will, of course, provide himself with whatever substance is to be drawn into the canal, whether this consist of a small skein of silk, or compressed sponge; the latter, in our estimation, being entitled to the preference.

"The patient, placed upon his back, with the *hips somewhat elevated,* (a good precaution, particularly when the openings are large, and the viscera liable to escape, while in the horizontal position,) the surgeon, standing or sitting at the right side of the patient, after reducing the hernia, places the index finger of the left hand upon the integuments of the scrotum, anteriorly and at a point *not higher* than the juncture of the lower with the middle third of the pouch. Sufficient pressure being now made with the finger to catch and hold, upon its end, the tegumentary tissues of the scrotum; these are now to be carried, upon the end of the finger, upward over the testis and arch of the pubes, until, immediately above the bone, the abdominal ring is easily found, and into which the end of the finger readily becomes fixed; where, as a guide to the instrument, it is to remain stationary, until the bulbous extremity of the canula is made to take its place *fairly* and *securely within the external ring*. The instrument, in the right hand of the operator, and held at the serrated portion of its handle, between the thumb and fingers, something after the manner of holding a pen, is passed into the pouch of the invaginated scrotum, and made to glide along and upon the back of the finger to its destination within the ring. The finger may then be withdrawn, and the left hand being now liberated, the thumb of this hand may be placed at a point opposite the internal ring; where, by pressure, all danger from any tendency there may be to partial protrusion of the intestine through the internal ring can be effectually obviated, while, at the same time, the pressure thus exerted at this point tends materially to facilitate the passage of the instrument through the tissues. The instrument is now carried forward until the bulb approaches as nearly as practicable to the internal ring, when the handle is depressed upon the pubes, which serves to elevate its bulbous extremity, causing a prominence upon the surface, and indicating both to the touch and to the eye the exact point of its exit through the integuments. The operator now places the index finger of the right hand through the ring of the stylet, and with a single movement of the finger thus placed, pierces all the tissues involved in the operation, and brings the point and eye of the instrument into view upon the surface opposite the internal abdominal ring.



"The surgeon, or his assistant, now arms the stylet, by passing through its eye, for an inch or more, (as seen in the plate,) the free ends of a slender cord, or tractor, previously passed through the silk or sponge; when, by a single reversed or backward movement of the finger, which is still in the ring of the stylet, the instrument is entirely disengaged and freed from the tissues, being still, however, concealed from view within the pouch of the invaginated integuments. The entire removal now of the instrument leaves the free ends of the tractor passing through the puncture in the scrotum, and hanging loose below. These are now seized, and by the necessary traction the foreign body is drawn from above into the passage, to the distance of some two inches or more, and leaving its upper extremity protruding from the puncture above; when, dropping from his grasp one of the ends of the cord, the surgeon, by means of the other end, draws it entirely out, and thus completes this bloodless and comparatively painless procedure.

"*Dressing, treatment*, &c.—In ordinary cases, where the apertures are not very much distended, and in most cases, especially when the sponge has been employed, there are, at first, few indications for interference—none, indeed, beyond the necessary precautions to prevent the escape of the viscera; and, as before stated, when the compressed sponge is introduced, the secretions absorbed by this substance soon expand it so as, with the swelling and increased rigidity of the tissues which necessarily ensue, to effectually prevent the occurrence of the event alluded to. Independently, however, of the foregoing consideration, a given amount of equable and uniform pressure is requisite, in order to effect the occlusion of the passage, by means of the adhesive inflammation, to produce which the operation is designed. For this purpose, I am aware of nothing better than the introduction, under a bandage firmly drawn around the pelvis, of a large sponge previously dipped in water. This retains moisture longer than the cloth compress, does not so effectually exclude the air, and thus hinder or prevent the cooling process of evaporation from the inflamed part, while the pressure exerted by it is more equable and agreeable to the patient, and it thus fulfils at once, and in a very satisfactory manner, several important indications in the treatment.

"I am aware that the foregoing suggestions, relative to the treatment *subsequent* to the operation, may be regarded by the professional reader as supererogatory or arrogant, and I have been induced to offer them only from a consciousness of having witnessed very many instances of failure to cure hernia simply from too great and too long-continued pressure during the inflammation; the inevitable effect being to prevent that free and plentiful deposit of plastic lymph, on which the permanent closure of the hernial apertures and consequent cure of the malady is almost entirely, if not wholly dependent. These disastrous results have been repeatedly seen by the writer, both in cases where the cure was attempted by injection of the sac, and also when the requisite inflammation had been induced by the *truss*, and resulting in *apparent* cure; but when, by the continued and persistent application of undue pressure, absorption of the new deposits, (which might be expected,) and consequent destruction of the delicate and tender adhesions, and reopening of the hernial passage, have resulted from the unintelligent use of the very means intended for the cure of the disease."

Two cases, recently treated, of his own, are reported by Dr. Riggs, and six others, likewise recent in date of trial, in which the operation and treatment were conducted by Dr. Carnochan. In regard to these cases Dr. Riggs remarks:—

"The reader will have noticed that, in the eight operations above given, were comprised persons of various ages, ranging from sixteen to sixty-three years. There are also found, among these, ruptures of all dimensions, and, in point of duration, varying from one to twenty-six years. Some of these were under treatment for other diseases, and *none* of them can be regarded as the most favorable subjects for any kind of surgical operation.

"Notwithstanding the fact that among these was not *one* which would have been *chosen* for an untried operation, yet it is seen by the report, and is well worthy of mention, that in no instance was there sufficient constitutional disturbance scarcely to attract attention. The operation itself is very simple, and equally safe; is attended with no inconvenience to the operator, and to the patient with comparatively no pain."

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

PHYSIOLOGY.

I. *Experimental Researches on the Physiological Properties and Uses of the Red and of the Black Blood.* By Dr. E. Brown-Séquard.

It is not the first time that M. Brown-Séquard has drawn the attention of physiologists to this subject, which his predecessors have but lightly touched, and in which so much still remains to be done. His researches commenced more than ten years ago, and he has published some of the principal results he had obtained in several communications made to the "Société de Biologie" and the "Académie des Sciences." In the treatise contained in the first number of his "Journal de la Physiologie de l'Homme et des Animaux," he compares the facts observed by him previously with those he has recently discovered, and proposes to give to the conclusions he believes himself justified in drawing from these different facts, the consideration which their importance deserve. The principal conclusions, drawn up in the form of propositions, of which each receives its experimental demonstration, are thirteen in number; the first five only are considered in the present article.

1. *The blood possesses two distinct physiological properties; the one of nutrition or of production of the vital properties of the tissues, the other of stimulation of the tissues and organs endowed with vital properties.*—The facts which demonstrate the existence of these two properties will be stated further below; here the author limits himself to define them, and to indicate the extent of their importance. Laying aside all considerations relative to secretions, he occupies himself only with the nervous and contractile tissues, or those having dynamic properties. Of the two physiological faculties which the blood possesses, there is one—that of maintaining the vital properties of these tissues, and even of regenerating them within a certain time after their complete disappearance—depending essentially on the oxygen it contains. Without oxygen the exchanges which take place between the tissues and the blood are not capable of maintaining the vital properties.

The other faculty is a stimulating or exciting property, such as that of heat, cold, or galvanism, when these physical agents, applied to contractile and nervous tissues, put them in action. The blood owes this important property to the carbonic acid it contains. By the first of these properties the blood thus gives life in power; by the other it gives life in action. With these general considerations M. Brown-Séquard connects the enumeration of the different details we shall meet as we proceed.

2. *The arterial and the venous blood differ essentially from each other, in their physiological properties, only on account of the quantity of oxygen and carbonic acid which these two fluids contain.*—The following experiment de-

monstrates that the nutritive property of venous blood differs from that of the arterial merely because it contains less oxygen.

Experiment 1.—120 grammes of arterial blood, and an equal quantity of venous blood, were defibrinized, and charged with oxygen by beating, and when both had become of equal scarlet-red color, they were injected, the arterial blood into the right femoral artery, the venous blood into the left femoral artery of a rabbit which had been dead for an hour, and in which the injected members had, ten or twelve minutes previously, attained cadaveric rigidity. The injections, made simultaneously, produced in both members the same effects at the same time; the rigidity ceased after five or six minutes, and restored muscular irritability manifested itself under the influence of shock, and of galvanism. Moreover, the irritability remained after the cessation of injection quite as long in the member which had received venous, as in that which had received arterial blood.

This experiment can be varied in different ways. When we deprive the arterial blood, after beating it, of a good part of its oxygen, through the agency of carbonic acid or hydrogen, this blood is incapable of regenerating muscular irritability, even soon after its disappearance; when we treat the venous blood, first oxygenized by beating, in the same manner, we arrive at the same result. Like results are obtained also, when, instead of acting upon the muscles, we try to recall the spontaneous actions of the nervous centres by means of these different kinds of blood.

The stimulating property depends alone on the quantity of carbonic acid contained in the blood. This is proved by the following experiment, in which these properties were, so to speak, inverted:—

Experiment 3.—In a rabbit which had been asphyxiated, and in which the irregular movements of the intestines, which are observed during and after asphyxia, were very strong, venous blood, highly charged with oxygen, was injected into the artery of one of the intestinal loops, the movements of which stopped very soon; in substituting immediately arterial blood charged with carbonic acid for this oxygenized blood, the movements were observed to return; another injection of oxygenized venous blood arrested them a second time, and they reappeared after another injection of black blood.

We shall find in another place of this memoir a great number of other facts which demonstrate the second proposition.

3. *All contractile tissues can, after having completely lost their vital properties, recover them under the influence of blood charged with oxygen, injected into the arteries.*—Thus the muscles of animal life can by this means be deprived of their rigidity, and again become irritable to the point of reproducing the phenomenon of muscular induction, and of recovering the power of engendering the galvanic currents, as practiced by Matteucci and Dubois-Raymond. The author has frequently proved the latter fact in batracchian and mammiferous animals. In regard, again, to the irritability after its complete cessation, and after the appearance of cadaveric rigidity, he has equally demonstrated the fact in two criminals. The following he observed in the second, a robust man, forty years of age, who was decapitated on the 12th of July, 1851, at 8 o'clock, A.M.:—

Experiment 5.—At 25 minutes past 10 o'clock in the evening all the muscles were rigid, and the last traces of irritability had disappeared We took about a pound of blood from the carotid of a vigorous dog; the blood was beaten and defibrinized, in order to avoid coagulation, and at 10 minutes past 11 o'clock the injection was commenced. It was made into the brachial artery of the left arm, at about its middle, where this extremity had been amputated. Soon after the commencement of the injection some reddish spots appeared on different parts of the skin of the forearm, and particularly on the wrist. These spots became larger and larger, and the skin appeared as it does in rubeola; soon afterwards the whole surface of the skin became violet-red. After some minutes this color disappeared, and gave place to the tint natural during life in a state of health. The skin became elastic and supple, as in the living individual, and we saw the hair-bulbs erecting themselves, and the cutis anserina produced. By augmenting and diminishing alternately the impulse of the current of blood, we succeeded in producing movements similar to the pulse in the radial artery; the subcutaneous veins were distinctly visible, and seemed as full as during life. Sometime after the commencement of the injection (twelve or fifteen minutes) the fingers, which had been very stiff, were relaxed, and the rigidity disappeared also in the other parts of the member. At a quarter to 12 o'clock (after thirty-five minutes of injecting) the irritability was restored, particularly in the muscles of the arm. It existed still in all the muscles of the member at 4 o'clock, A.M., the next day, (twenty hours after decapitation.)

In the first criminal nearly the same circumstances took place. In animals the results are similar, and can be varied much more by the experiments.

In comparing these results with those of the experiments made on man, M. Brown-Séquard proved that irritability disappeared later, and that cadaveric rigidity came on later in man than in animals. The maximum duration of muscular irritability in rabbits has been eight hours and a half, and in Guinea-pigs eight hours and some minutes; in dogs it is sometimes nine or ten hours. In one of the two criminals referred to the irritability had completely disappeared in ten or twelve hours, and in the other in about fourteen hours after death.

The results, however, of a number of experiments, show that the more energetic the irritability is at the moment of death, the easier and the longer possible it is to recall it after the establishment of cadaveric rigidity.

In the same manner as with the other muscles of animal life, can the heart become irritable again, after having completely ceased to be so; but of all the contractile organs it seems to be the least capable of reacquiring irritability. What is true in regard to the striated muscles, is equally so in reference to those of organic life; the intestine, stomach, œsophagus, uterus, iris, bladder, ureters, seminal vesicles, blood-vessels, and thoracic duct, the contractile fibres surrounding the hair-bulbs in man, can recover their irritability after having lost it.

4. *All the nervous tissues can, after having completely lost their vital properties, recover them under the influence of blood charged with oxygen.*—The correctness of this proposition is demonstrated, in regard to the motor and sensitive nerves, by the following experiment:—

Experiment 9.—The abdomen of a dog was opened by a nearly complete circular section, and the aorta ligated above the origin of the renal arteries; then a linen band was stitched to the lips of the abdominal wound, so as to avoid exposure of the viscera to air. After the lapse of nineteen minutes, sensibility had completely disappeared in all parts of the skin of the posterior extremities; after twenty-four minutes voluntary motion was abolished. About half an hour afterwards the sciatic nerves, when directly excited by galvanism, did not give any sign of excitability; the irritability of the superficial muscles had disappeared in an hour and thirty-six minutes after the operation. Cadaveric rigidity commenced to show itself a little afterwards, and in two hours after the application of the ligature it was very strong and general. The ligature was then cut. and circulation re-established. The rigidity ceased, and in six or eight minutes muscular irritability reappeared. The motor excitability of the sciatic nerves commenced to manifest itself in about twenty minutes after the re-establishment of the circulation. In twenty-eight minutes after the section of the ligature sensibility was restored, and there were, at the same time, feeble appearances of voluntary or reflex movements. An hour later the posterior members made quite energetic voluntary movements, and the sensibility had been restored in them in an almost normal degree.

The spinal marrow in the same way can recover its vital properties; this is proved by an experiment similar to the preceding, by dividing the spinal marrow at a level with the second or third lumbar vertebra in such a way as that the inferior extremity of this organ, separated from the encephalon, does not receive any more blood after the ligation of the aorta. It is found, then, that the reflex faculty is quickly lost, and that the excitability of the lumbar enlargement disappears some time before the motor nerves lose their vital property. After the restoration of the circulation the excitability of the lumbar region of the spinal marrow, and its faculty to produce reflex motions, reappears some time after the return of the properties of the motor nerves.

5. *The brain, after having completely lost its functions and vital properties, can recover them under the influence of blood charged with oxygen.*—M. Brown-Séquard supports this proposition by experiments, in which he tied the two carotids and vertebral arteries in animals. In two or three minutes after cutting the ligature, he saw all the cerebral functions restored; but, says he, experiments like the following one demonstrate still better this influence of the blood on the brain and medulla oblongata:—

Experiment 11.—I decapitated a dog, taking care to make the section below the point where the vertebral arteries enter their osseous canals. Eight minutes afterwards, pinching of the skin having no effect, I applied a galvanic current of considerable intensity to the medulla oblongata, previously exposed, taking care to avoid passing the current through neighboring parts. No movement became manifest. The conductors, applied to the protuberance, produced no effect. Ten minutes after the cessation of the respiratory movements of the nostrils, lips, and inferior maxilla, I adapted to the four arterial trunks of the head, canulas, which were connected by tubes of caoutchouc, with a copper cylinder, through which I injected, by means of a syringe, blood charged with oxygen. In two or three minutes, after some slight irregular movements, I saw movements of the eyes and muscles of the face, which seemed directed by the will.

I prolonged the experiment for a quarter of an hour, and during all this time these movements, apparently voluntary, continued. The injection being stopped, these movements ceased, and were soon replaced by convulsions of the eyes and face, by respiratory movements of the nostrils, lips, and maxilla, and finally, by the tremors of death. The pupil was contracted and then dilated, as in ordinary death.

M. Brown-Séquard endeavors then to prove that the regeneration of vital properties has not been shown by any experiments anterior to his. In the apparent death of new-born and asphyxiated animals, these properties are not lost; they have, therefore, not been regenerated by calling back life by pulmonary insufflation or other means.

Stenon, Bichat, and other physiologists, have proved the abolition of sensibility and voluntary motion after the ligature of the aorta, and their return after the re-establishment of the circulation; but they have not studied the influence of the circulation upon the different tissues, muscles, and nerves.

Kay announces, it is true, that he has seen irritability returning in muscles which had ceased to contract under the influence of galvanism, by injecting blood into their arteries. "But," says M. Brown-Séquard, "this distinguished physiologist did not carry his experiment far enough; he believed muscular irritability lost, because he did not see motion. This was not a sufficient sign; muscles, if stimulated, can preserve irritability half an hour, or even longer, after movements have ceased to be produced; contractions take place in a great part of a galvanized muscle without the movement of the member in which this muscle is situated. To be certain that muscular irritability has completely disappeared, it must be shown not only that galvanism and shocks do not produce any more contraction, but also, that cadaveric rigidity is established. Besides, if the irritability had disappeared in reality in the experiments of Kay, he did not succeed in restoring it by injections of venous blood, as he believed he had; for the venous blood is absolutely incapable of regenerating the vital properties of muscles by the time they have completely disappeared. This will be proved in the continuation of this memoir."—(*Archives Générales*, March, 1858; from *Journ. de Physiologie*, 1858, No. 1.)

II. *Memoir on the Effects of Extirpation of the Pancreas.* By PROF. BÉRARD and M. COLIN. (Read before the Académie de Médecine, Jan. 19th, 1858.)

The experiments, of which this memoir gives an account, were made by MM. Colin and Bérard, at the school of Alfort, and the results which they furnished were verified repeatedly by a commission composed of MM. Duméril, Cloquet, Jobert, Wurtz, Longet, Ségalas, and Renault. The object of the experimenters was to ascertain whether extirpation of the pancreas, or ligation of its excretory ducts, produced the same effects in carnivorous as in herbivorous animals.

The first experiments were made on dogs; after some preparatory trials, the following mode of proceeding was adopted as the best:—The animal was left without food for four or five days; then an opening was made through the abdominal parieties, in order to draw out the loop of the duodenum, to which the pancreas is fixed. The pancreatic ducts were ligated, and oil and warm water were injected successively into the cavity of the intestine, through a puncture made for the purpose. The duodenum and pancreas were pushed back into the abdominal cavity, and the external wound closed by sutures. After three or four hours the animal was killed. Sixteen dogs were thus sacrificed, and in all white, opaque chyle was found in the mesentery, and even in the walls of the intestines. But the result of these experiments might be considered inconclusive, on the ground that the pancreatic juice found in the intestine of these animals might have been retained there from a previous digestion. In order to remove this objection, two palmipeds, two pigs, and several dogs were operated upon in May and June, 1857, and not killed until several months after the operation.

In the duck the duodenum forms an elongated loop, and the two lobes of the pancreas, which unite at their superior part, fill up the space. On opening the duck which had served for the experiment, it was found that of this gland nothing was left but two small tubercles, which had not the least connection with the intestine; the animal had lived eight months after having lost its pancreas; at the time of the operation it weighed 730 grammes; six months later its weight had increased to 1667 grammes, and its body contained a fair proportion of fat.

A goose, which had been operated upon in the same way, died at the end of six months; it is probable that it might have been saved by substituting, as in the duck, a strongly nitrogenized regimen for an exclusively vegetable food.

In the two pigs all the internal part of the pancreas was extirpated; it was, therefore, certain that the duodenum did not receive any more pancreatic juice, and the fact was proved by the autopsy; the animals had, nevertheless, increased in size. The second had gained twenty-five kilogrammes in five months and a half; and on opening its body the mesenteric vessels were found to contain emulsified chyle, and the layer of fat deposited on its back measured three centimetres in thickness.

Finally, five very young dogs, of the same litter, were operated upon about eight months ago. Two are yet alive, and are fine-looking, perfectly developed animals. In the others, which were not inferior in development, the autopsy proved the pancreas to be totally isolated from the intestine, and its canal obliterated. There remained only a small granulation, of the size of a bean, which opened separately into the intestine, and which had no communication at all with the gland proper. Could this organ have supplied the place of the pancreas? In order to show the inadmissibility of this supposition, it is sufficient to refer to the weight of the structure, which was about the ninetieth part of that of the pancreas in a dog of the same size.

"Our vivisections," says M. Bérard, in conclusion, "have proved to us that fatty matters can be digested and absorbed without the participation of the pancreas; that under these conditions the animals live very well, are regularly developed, grow fat, have no fatty evacuations, and preserve the mucous membrane of their digestive organs in good condition, and with large and perfect villosities.

"All these results of experiments, which have been followed up for a long time, and multiplied on various types of animals, permit us now to generalize more than formerly, and to say, without rashness, that *in herbivorous, ruminant animals, in carnivorous, in the pig, which is omnivorous, and in birds, the pancreatic fluid is not necessary either for the digestion or the absorption of fatty substances.*"—(*Gaz. Hebdomad.*, Jan. 22d, 1858, and *Gaz. Méd de Paris*, Jan. 1858, No. 4.)

III. *On the Nervous Centres controlling the Contraction of the Uterus.* By DR. O. SPIEGELBERG, of Göttingen.

As in the physiology of the nervous system of all the other viscera, so in that of the uterus, the question of the locality of its nervous centres remains still open to dispute. Some physiologists (Brachet, Longet, Valentin, Budge, Franz M. Kilian) referred these centres to one or the other part of the cerebro-spinal system, others (Berling, H. Nasse) to the sympathetic, and vindicated their opinion by experimental researches.

The author experimented on forty animals, mostly rabbits, some cats, and a few guinea-pigs. He communicates the results obtained in thirty-five cases.

In experimenting upon organs endowed with organic muscular fibres, it is very important for the physiologist to be able to exclude the spontaneous motion in these organs from that produced by the irritation of certain parts of the nervous system. Some preliminary experiments, made partly for this purpose by the author, confirmed the fact that cessation of circulation produced always peristaltic contraction of the uterus, while this organ remained at rest as long as the heart pulsated, no matter whether air was admitted into the parts or not. Dr. Spiegelberg believed he had thus found a pretty reliable criterion for the discrimination between spontaneous contractions and those resulting from irritation, and therefore made his experiments and observations on living animals. On the same ground he considers the experiments of Kilian as doubtful in their results, as they were made on dead animals, in which even the preservation of the peritoneum is insufficient to prevent peristaltic action.

The animals were put under the influence of ether before the operation. In laying bare the parts, loss of blood was carefully avoided. For the purpose of irritating the parts of the nervous system exposed, Dubois' induction-apparatus was used. The cerebellum, and frequently also the spinal cord, had to be excited by mechanical and chemical irritants, as in their case isolation of the electric influence is impossible.

The author sums up the results of his experiments in the following propositions:—1. *Cessation of circulation and the stasis of blood produced by it are the causes of the peristaltic movements of the uterus. As long as the heart pulsates, these movements are not observed at all, or are but exceedingly slight.* The deportment of the uterus resembles in this respect that of the intestinal tube. It is possible that anæmia and hyperæmia play a part in this phenomenon. We are inclined to lay more weight upon anæmia from the following causes:—(*a.*) In animals which die from loss of blood, the abdominal viscera in general, as well as the uterus, show more vigorous peristaltic motions. (*b.*) After the death of the animal a stronger peristaltic action is always observed in that cornu uteri the vessels of which have been emptied by separation from the mesometrium. (*c.*) In repeated experiments on living animals compression of the aorta immediately below the diaphragm was always followed by contractions of the genital organs and the intestines, which lasted as long as the blood going to these organs was arrested; when the impediment was removed, rest was gradually restored in them.

2. *Through the par vagum no impressions are conveyed to the uterus,* although

Franz M. Kilian established the contrary as the result of his experiments. If, after irritating the pneumogastric, motions of the uterus were observed, they were of a spontaneous kind, or owing to the paralyzing influence exercised upon the heart; for, if the irritation was so feeble as not to affect the heart, contractions of the uterus were not produced. When irritation of the par vagum is followed by uterine contractions, it acts in the same manner as the compression of the abdominal aorta. The failure of this experiment was particularly conspicuous in animals which show a feeble power of peristaltic action in general, as in cats and dogs, while, however, upon irritation of the nervous centres a vigorous reaction in the genital organs was produced. With this view harmonize also the results of irritation of the nerve after its ligation; irritation made at its peripheral end produced no effect, except when the heart was affected; that at the central end, however, influenced the uterus, undoubtedly through the agency of the medulla oblongata; in fact almost each time the abdominal muscles were simultaneously thrown into contraction, a phenomenon never observed in consequence of irritation of the peripheral end.

3. *Uterine contractions can be produced by irritation of the medulla oblongata.*—As this irritation has a similar effect upon the heart as that of the par vagum, it remained to be proved that the excitation of the uterus is not a secondary phenomenon; but although the pneumogastric was compressed and cut through, irritation of the medulla oblongata produced the same effect upon the uterus. The result was also equal no matter whether the heart was affected or not.

4. *The principal centre is the cerebellum.* Irritation of its central as well as of its lateral parts, be it superficial or deep, was always followed by uterine contraction. Sometimes it was also observed after irritation of the posterior corpora quadrigemina, but not after that of the cerebrum. The author confirms thus the opinion of Budge and Valentin that the motor nerves of the uterus have their central ends in the cerebellum.

5. *From each portion of the spinal cord, but more especially from the lumbar and sacral parts of the same, contractions of the uterus can be excited.* In unimpregnated animals, irritation of the spinal cord excited uterine contractions, or increased them if they already existed. In pregnant animals the existing contractions of the uterus ceased if the spinal cord was irritated. In regard to the latter phenomenon, the author adopts Schiff's explanation of the arrest of motion observed in consequence of the irritation of nerves; this physiologist assumes that this phenomenon is not a result of activity of the nerve, but is, on the contrary, owing to excessive excitation or exhaustion. This view being taken, the results of irritation of the spinal cord in pregnant animals serve to prove the foregoing proposition just as much as those obtained in unimpregnated animals.

6. *Irritations produced in the central parts are conducted along the medulla oblongata and the spinal cord downward, and reach the uterus through the branches of the sympathetic nerve connected with the cord and through the sacral nerves; while irritations originating in the uterus travel the same route in an opposite direction to the central parts.*—This proposition is rather inferred from foregoing reasons than proved by experiments. As irritations

originating in the cerebellum are not conveyed along the par vagum, but go downward along the spinal marrow, which has only sympathetic connections with the abdominal viscera, the bridge from the spinal marrow to the uterus has to be sought for in the communicating branches. Irritation of the sympathetic in the thoracic cavity was never followed by marked effect; irritation of the sympathetic and its connecting branches in the abdominal cavity was more successful; but the author lays no stress upon this circumstance, as the excitation in this case cannot be directed wholly upon the nerve. The obvious influence of the lumbar and sacral parts of the spinal marrow as well as of the trunk of the sympathetic, which is confirmed by all observers, he considers of great importance.

In case the above proposition is correct, the increase and diminution of the frequency of the pulse, observed by Martin and Maurer in connection with labor-pains, is not to be explained by the excitation of the uterus being transmitted through the sympathetic and par vagum to the heart; but by its being conducted along the cord to the medulla oblongata, whence it is transferred to the pneumogastric, thus producing an increase of the heart's action.

Finally, the author observes that he by no means attributes the incitement of parturition to the nervous system. The influence which the disturbance of the circulation has in producing uterine contractions, as shown by his experiments, leads him, on the contrary, to the hypothesis that local changes in the circulation of the uterus, taking place at the termination of gestation, are the causes of the beginning of contraction.

In regard to the mode of uterine contractions, which, as they are of the peristaltic kind, cannot exist in the whole organ at once, the author has observed the following facts:—At first the mesometrium contracts and fixes the uterus against the pelvis; then the vagina and the cervix uteri become narrower, and this circular contraction is propagated to one or both cornua uteri, until a strong constriction is formed over the fœtus lying next to the cervix; this during a simultaneous dilatation of the vagina and cervix progresses downward, and propels the fœtus in the same direction. The true expulsive contraction therefore commences in the upper part of the uterus; previous to it, however, the organ is fixed to the pelvis by the broad ligaments, and by its own longitudinal fibres.

In woman the uterus is probably fixed during each pain by the round ligaments, and by the muscular fibres of the broad ligaments against the pelvis, (hence its so-called erection, and its greater protrusion from the anterior abdominal parietes;) and then the fundus contracts over the ovum and propels it downward:—(*Schmidt's Jahrb.*, 1858, No. 3, from *Henle und Pfeufer's Ztschr.;* 3 Reihe, ii., p. 1–43, 1857.)

IV. *On the Peristaltic Motion of the Intestines.* By DR. SPIEGELBERG.

The experiments made with reference to the contraction of the uterus, served the author with observations in regard to the peristaltic motions of the intestines. His attention was directed principally to three points:—

1. *The dependence of intestinal contractions upon the spinal cord and brain*, a known fact, was fully confirmed. By mechanical as well as electric

irritation of each point from which the uterus was influenced, the intestine also could be put into motion.

2. *The influence of disturbed circulation upon the intestines, especially the small, is exhibited in a still higher degree than in the uterus.*—As soon as the circulation commences to stagnate, vigorous peristaltic motions take place, and increase with its complete cessation. Compression or ligation of the abdominal aorta below the diaphragm, acts in the same manner as arrest of circulation. After ligation of the vena cava or vena portarum, peristaltic motions never became as vigorous as after ligation of the aorta; a circumstance which speaks for the greater importance of anæmia in producing the phenomenon. Each change of circulation, in general, is capable of producing peristaltic motions of the intestines. These facts are contradictory to the opinion of Brown-Séquard, who believes that the carbonic acid accumulated in venous blood is the exciting agent. To ascribe the peristaltic motions observed, after opening the abdominal cavity in recently killed animals, to the irritation produced by the access of atmospheric air, is no doubt a great error.

3. *Pflüger's new method of checking peristaltic motions of the intestines by irritation of the spinal marrow was practiced repeatedly with success.*—(*Henle und Pfeufer's Ztschr.* 1857; 3 Reihe, ii., p. 44.)

PATHOLOGY.

V. *On Spontaneous Primary Pyœmia.* By Prof. C. A. Wunderlich.

The author communicates five cases of spontaneous primary pyæmia. It is well known that the existence of this disease is doubted by many pathologists, as Castelnau, Ducrest, and others. In consideration of the confusion of language and ideas as yet existing in regard to the pathology of the disease, Prof. Wunderlich thought it necessary to preface his report by some preliminary remarks, in order to make himself better understood.

Pathologists have long since ceased to understand by the term "pyæmia" a constant and demonstrable morbid condition of the blood; nor is its application at present confined merely to such cases of the disease in which the product of morbid action is pus. The term has acquired a conventional signification which is rather contradictory to the etymology of the word, as well as to the idea originally attached to it. Pathologists have accustomed themselves to use the term as designating that morbid condition of the system in which, without specific cause, (as syphilitic, variolous, carcinomatous infection, &c.,) certain acute morbid processes, inflammatory in their character, or connected with inflammation, (as extravasation, formation of ichor, &c.,) are developed in several organs or tissues at the same time; the disease of the more or less numerous and distant parts thus attacked not being traceable to any local, exciting cause.

The absence of pus in the blood, the non-existence of any palpable morbid change in it is therefore no objection to the diagnosis of pyæmia. We do not know the essential morbid processes by which the multiplied local affections are brought about; but as they appear in many places at the same time, and without local cause, we have to assume a constitutional disturbance, which pathologists have termed "pyæmia."

In regard to the terms "spontaneous" and "primary," it is unquestionable that, as in nature generally, so also in pathological processes, nothing can happen *spontaneously*. The term means simply that the cause of disease is unknown, and particularly that no infection from external sources has taken place. We are just as far from maintaining that the morbid changes of a pyæmic character observed in the different cases have been *primary* disturbances. What we wish to express by the term is, that these changes were neither occasioned by any local suppuration nor consequent upon any severe general disease, as typhus, scurvy, &c., constitutional disorders of the system in which, as it is well known, the sudden occurrence of suppuration and formation of ichor in different parts of the body is frequently observed.

The following are the cases reported by Prof. Wunderlich:—

CASE I.—A strong and healthy-looking coachman, twenty-five years of age, fell suddenly, and injured his right trochanter. He complained of pain, and the parts were bruised; there was, however, no inflammation developed in the spot, as was confirmed afterwards by post-mortem examination. Symptoms of an apparently typhoid fever soon set in, with very high temperature, delirium, drowsiness, tumefaction of the spleen, petechiæ, albuminuria, but no chills. Death took place on the fifteenth day. The autopsy revealed multiple yellow infiltration of the spleen and left kidney; catarrhal inflammation of the pelvis of the latter, and of the intestines; extravasations underneath the endocardium, and in the vastus externus muscle of the right side.

CASE II.—A cabinet-maker, thirty-nine years of age, occupying a damp dwelling, fell from a ladder a few steps, and struck his head slightly. He felt very weak immediately afterwards; had pain in his fore-arms and feet, without having injured them. Severe symptoms soon set in, partly cerebral, partly pulmonic, partly abdominal, (diarrhœa, painful abdomen, enlargement of spleen;) albuminuria, with admixture of blood; violent fever without chills; temperature 32·5° R.; very frequent pulse, and extravasation underneath the skin. Death on the twelfth day.

Post-mortem appearances.—Double suppurative pleuritis; two abscesses in the left, and numerous lobular infiltrations in the right lung; enlargement and softening of spleen without deposits; both kidneys contained numerous, disseminated, purulent deposits; croupy inflammation of the pelvis of the right kidney and ureters; intestines normal; a completely isolated collection of pus in the sheath of the tendon of the left extensor carpi radialis muscle; bones and vessels unaffected.

CASE III.—A man of rather slender form, twenty-three years of age, living in good circumstances, was taken ill with severe diarrhœa, after having slept near a damp wall in a badly built summer-residence. On the evening of the same day he had a chill of fifteen minutes duration, which recurred after two days. Soon afterward supervened pain and swelling of the joints, delirium, high temperature, icterus, rapid collapse. Death on the twelfth day. Body decomposing with remarkable rapidity; biliary apparatus normal; spleen double its natural size, and softened; Peyer's glands in the ileum of dark-gray color; enlargement of a number of the solitary follicles; mesenteric glands somewhat enlarged; the right knee-joint contained thick, dark-yellow pus, and its capsule was slightly reddened in some places; the bones and periosteum normal. In the rectus femoris muscle there were several yellow semi-fluid deposits, and disseminated abscesses of the size of a filbert, containing dark-yellow pus.

CASE IV.—A servant girl, twenty-six years of age, got thoroughly wet while washing. The day previous to it her catamenial discharge had commenced. On rising in the morning she was taken with dizziness, syncope, and afterwards a chill, which lasted almost the whole day. The next day she had very intense fever, pectoral symptoms, pain in several joints, albuminuria, liquid stools, an eruption similar to ecthyma, and blisters on her hands and feet. Death on the fourth day. On post-mortem examination, numerous extravasations and sanguineo-purulent deposits were found in the cutis; purulent myocarditis, hypendo- and hypocarditis, with partial sugillations; pleuritis; œdema of the lung; many small abscesses in the thyroid gland, liver, and kidneys; spleen softened and enlarged; recent extravasation in the brain.

CASE V.—A healthy man, twenty-one years of age, employed in a factory, was taken ill, without any assignable cause, with the symptoms of severe typhus. On the seventh day (commencement of our observation) the unusually high temperature for typhus (32·9° R.) was first noticed. On the ninth day the joints became affected, and a roseolar eruption broke out. Albumen in the urine, which had been noticed, now disappeared. The skin, discolored by icterus, was covered by pemphigus, blisters, and numerous ecthymatous pustules. Death took place on the fifteenth day. On an autopsy, abscesses were found in the areolar tissue of the neck, in the sterno-clavicular articulation, in the pectoral muscles, in the shoulder, and in the elbow-joint; bronchitis; on the right side limited infarction of the lung; slight pleuritis; in the stomach ecchymoses; some glands of Peyer prominent; slight swelling of the mesenteric glands; spleen enlarged, softened; catarrhal inflammation of kidneys; soft coagulum adhering to the inner wall of the right iliac vein.

Prof. Wunderlich sums up his observations as follows:—

1. There occur certain cases of disease which can only be regarded as cases of idiopathic pyæmia. All the anatomical characters of pyæmia are present. Numerous foci of morbid action, bearing the characters of inflammation, its preliminary states, and its products, are spread over different tissues and organs; but there is no evidence of causes known to produce pyæmia, such as injuries with consequent local suppuration, or the puerperal state, phlebitis or endocarditis, formation of ichor in different localities, introduction of putrefying substances into the system by dissecting wounds, or infection from miasmatic agents; nor is it apparent, that a specific process, communicated by contagion (such as variola, glanders, &c.,) or tuberculosis, co-operate in giving rise to these numerous inflammations. The disorder of the constitution is, in such cases, as far as we can judge from our present state of knowledge, of a completely self-generating character.

2. The constitutional disease, appearing in the form of idiopathic pyæmia, can be developed in individuals enjoying complete health. In all five cases the patients had not suffered from any disturbance of health, or only to so slight a degree as that it could not have any connection with the grave disease by which they were attacked. The essential causes are quite unknown. Predisposing

causes are just as little apparent. In three cases, however, exposure to moisture (sleeping in a damp room in two, getting wet in one) seems to have produced the disease, or determined its outbreak. The disease commenced in January in one case; in February in three, in July (moist and cold summer) in one.

3. The anatomical changes found distributed over a great number of parts of the body were, in our five cases, the following:—Plastic infiltration of the tissues, or plastic exudations on serous membranes in all five cases; catarrhal or croupy affections of the mucous membranes in all cases; softening and enlargement of the spleen in all cases: suppuration in four cases; extravasation of blood in three cases; hemorrhagic exudations in two cases; œdema in two cases; early putrefaction of the body in two cases; soft, abnormally colored coagulum in a vein (which, however, did not correspond to the affected periphery) in one case.

4. The number of affected organs was very great. No circumstance served to explain the reason why some of these were attacked in one case and escaped in the other. The following changes attracted notice:—In the brain, large extravasation in one case; in the lips, abscess in one; in the areolar tissue of the neck, suppuration in one; in the thyroid gland, abscess in one; in the heart, infiltration and abscess in one, and extravasation in two; in the bronchial tubes, catarrhal inflammation in two; in the lungs, œdema in one, infiltration and abscess in one; bloody infarction in one; in the pleura, plastic exudations in three, purulent and hemorrhagic exudation in one; in the stomach, extravasations in one; in the liver, small abscesses in one; in the spleen, softening and enlargement in each case, together with numerous infiltrations in one; in the kidneys, numerous infiltrations or abscesses in three; in the pelvis of the kidneys, catarrh in two, and croupy exudation in it and the ureter in one; in the areolar tissue, suppuration in one, œdema in one; in the muscles, infiltrations and abscesses in two, extravasation in one; in the sheath of tendons, abscess in one; in the joints, abscesses in two; in the skin, extravasations in four, purulent and sanguineo-purulent pustules and blisters in two, icterus in two, erysipelas in one.

5. The first decided symptom of disease was, in three cases, syncope, in consequence of which the patients fell down. The injuries thus received were slight, and could only in the beginning be considered of importance; the further course, as well as the anatomical investigation of the injured parts, proved that these injuries could have exercised no influence upon the development of pyæmia. In three cases a chill was noticed among the first symptoms. In all cases a deep, general feeling of illness was present from the beginning.

6. The general type of the disease, and the combination of the different symptoms was of a kind that, in all the cases at their beginning, and in several until death, the diagnosis could not be determined.

In three cases (I., II., and V.) the characters and combinations of symptoms resembled, more or less, typhus; in two of them (I. and V.) affections of the follicles in the lower part of the small intestines were present, though not in a degree which could justify the diagnosis of typhus on anatomical grounds; in case II. no follicular catarrh was found, while its existence in case III. was not accompanied with typhoid symptoms. In case II. the diagnosis wavered in the beginning between typhus and acute tuberculosis. The commencement of case III. was of the character of intermittent fever. Cases III. and V. could have been considered rheumatic arthritis or malignant icterus. Cases I. and II. resembled local acute disease of the kidneys.

7. The particular symptoms were exceedingly various; a number of them, however, were constant in all cases, no matter what form the local changes of the organs had assumed.

The chill was repeated in only one case. The other symptoms of fever were in all cases of great intensity. The temperature rose and remained for several days at a height which, in less dangerous diseases, hardly occurs in a transitory manner (32·5–33·0° R.;) it made only insignificant remissions in the morning, or none at all, a feature different from that in enteric typhus, and rose in one case, immediately before death, to the extremest point ever observed (34·2° R.)

A decided intermission, as observed in intermittent fever of even the worst kind, never took place. Thirst was in all cases very intense. The pulse corresponded generally to the temperature; it was found to be from 112 to 148 beats a minute, and diminished in frequency only for short intervals. A dicrotic pulse was observed several times.

The expression and feeling of prostration was very marked in all cases. All the patients sunk rapidly, and presented very soon, either temporarily or permanently, symptoms of collapse. Grave cerebral symptoms were present in all cases. Dizziness, headache, tinnitus aurium were complained of by the majority of patients; delirium was not absent in any case. The cerebral symptoms were not explained by anatomical lesions, and just in the case in which apoplexy finally occurred, (IV.) consciousness had been retained most perfectly during the course of the disease. Dyspnœa was considerable in four cases, and was in three in no proportion to the rather insignificant lesions in the respiratory organs. Complete loss of appetite, dryness or thick coating of the tongue were present from the beginning in all cases. Diarrhœa was observed in all cases; in most of them it occurred early, was at one time slight, at other times profuse. The stools were of more or less yellowish color, and did not show the stratification of typhoid discharges. Tumid, more or less tense abdomen was present in four cases, and in the same patients sensitiveness and gurgling in the ileo-cæcal region were noticed. Albuminuria was observed in four cases; in one it disappeared before death; bloody urine was discharged in two cases; pain in the joints was present in every case, even in those in which no anatomical lesions could be found in the joints or their vicinity. Besides the intensity of thirst, this was the principal complaint of the patients. The skin presented four times a cyanotic, twice an icteric discoloration. Numerous sudamina appeared in cases II. and V. A slight roseolar eruption was observed on the trunk in cases I., II., and V., petechiæ in the same, larger livid spots and sugillations in the same, and in case IV. In this case also an eruption of ecthymatous pustules, and blisters filled with blood and ichor, appeared on hands and feet; in case V. an eruption of ecthymatous pustules and pemphigus on the back.

8. The course of the disease was rapid in all cases, and the termination fatal.—(*Schmidt's Jahrb.*, 1858, No. 2, from *Arch. f. Physiol. Heilk.*, p. 89, 1857.)

Editors' Table.

American Medical Association.—The recent meeting of the American Medical Association at Washington proved, as was anticipated, to be one of the most agreeable, as it was also one of the largest, assemblies of the kind that has ever convened. The number of delegates present was nearly or quite five hundred, representing, with only two or three exceptions, every State in the Union. Even California had her member, in the person of Dr. Harvey, who was one of the few passengers saved, and the only one of five physicians on the occasion of the sinking of the ill-fated steamer Central America, on her way from the Isthmus to New York, a few months ago. The proceedings of the meeting, although possessing a certain kind of interest to those who are fond of medical politics, we do not think are of sufficient importance to justify the space which their publication in our pages would require. The number and value of the contributions, as well as can be ascertained, will equal if not exceed those of any previous session; and when the volume of Transactions shall appear, we shall take pleasure in laying before our readers abstracts of the more interesting papers.

The meeting was held in the lecture-room of the Smithsonian Institute, where the delegates were welcomed to Washington in a pleasant speech by Dr. Harvey Lindsley, Chairman of the Committee of Arrangements. The retiring President, Dr. Paul F. Eve, then delivered an address, consisting mostly of a sketch of the history of the Association, and a statement of what it had accomplished, closing with a few decided, but we think rather problematical, assertions concerning its moral power. Upon this last theme, and in allusion to the controlling influence assumed for the Association over medical education, and more particularly over the medical colleges of the country, the worthy President made use of the following extravagant language:—"It has," he says, "but to speak on this point, and it will be obeyed; for it is now too late for any physician to oppose, or any medical college to set at defiance, the moral power of this body." Now, if we mistake not, this all-powerful body has repeatedly lifted its trumpet-tongued voice against the medical schools,—its messengers, in the form of committee-men, raising themselves as high as the two short stirrups of the saddle on which they sit will permit, and in true Quixotic tones summoning the windmills of the plain to lay down their arms and surrender; but the latter, not excepting the one in which the President himself is interested, unimpressible by what seems to be only a *vox et prœterea nihil*, continue to turn their sails to the favoring breeze, from whatever quarter it may come, and go on grinding out doctors in the old tic-tac style, stopping only now and then to have a rotten or worn-out cog replaced with one of better stuff, or to have the stones set a little closer, to suit the increasing demand for a finer product.

We have no idea that the Association, as at present organized, consisting, as everybody knows, of a large majority of what are called, curiously enough, *lay* members of the profession, and evincing, as it does, in a greater or less degree, a sentiment of hostility toward the medical colleges, will ever succeed in accomplishing its high and worthy object in the matter of medical education, until it shall assume a more deferential tone toward those in whom the power practically resides. It is the purest fustian gravely to announce to the medical faculties throughout the country that they dare not disobey the commands of the National Association; when it is a well-known fact that the latter, notwithstanding the great moral power claimed for it by the late President, has not succeeded, after a labor of ten long years, in incorporating a single one of its propositions among the requirements for graduation heretofore agreed upon by the leading schools. But we think that the Association is coming to its senses upon this question, for, at the meeting just held, a committee-resolution was adopted, requesting all the schools to send their delegates next year to a special meeting, to be held at the place agreed upon by the Association, one day in advance of the latter, to concert such measures as they may deem best for the improvement of the present system of public teaching; the result of their deliberations to be presented in a report to the Association. In other words, the Association has appointed a committee, consisting of all the delegates of the medical schools, to make a report upon the subject of medical education at the next meeting. If the schools, and more especially those that are generally looked upon as the leading institutions of the kind, will take this matter in hand, some good may possibly be accomplished; and yet it requires no prophetic vision to discern almost insurmountable difficulties in the way. We need refer to only a single one, namely, the question of clinical instruction. Bedsides teaching is admitted, by all sober-thinking minds, to be essential to an adequate course of instruction, before the student applies for graduation, and yet not one-half the schools are enabled to offer anything more in this way than the occasional introduction of a patient into the lecture-room of the college. But still, we hope for something, undefined though that something be to our minds at present, and shall lend our feeble efforts in promoting the success of the experiment.

The first and by far the most exciting topic discussed at the recent meeting, was the offence of Dr. Reese, of New York, and Dr. Bryan, of Philadelphia, against the code of medical ethics,—these two gentlemen having given letters to the notorious Dr. McClintock, recommending him for the place of Physician-in-Chief to the Philadelphia Hospital. Dr. Reese took the initiative by apologizing to the Association, of which, it will be remembered, he was one of the Vice-Presidents, which apology was, upon motion of one of the Philadelphia delegation, immediately accepted; but being deemed by many insufficient, it was subsequently reconsidered, and after much warm discussion, and the exhibition of no little personal feeling upon the part of several members, Dr. Reese consented to the following as a substitute:—"The undersigned regrets that he certified to the professional qualifications, for Blockley Hospital, Philadelphia, of an expelled member of this body, and hereby offers this apology for his departure from the ethical code."

This was considered as satisfactory by all, and Dr. Bryan having walked over the path that had been thus made by Dr. Reese, the usual business of the meeting was proceeded with.

Previously to the final settlement of the ethical case, however, the committee on nominations made their report, which was accepted, and the following named gentlemen were unanimously elected to serve for the ensuing year:—*President*, Dr. Harvey Lindsley, of Washington. *Vice-Presidents*, Drs. W. L. Sutton, of Kentucky; Thomas C. Edwards, of Iowa; Josiah Crosby, of New Hampshire; and W. C. Warren, of North Carolina. *Secretaries*, Drs. A. J. Semmes, of Washington; and S. M. Bemiss, of Louisville. *Treasurer*, Dr. Caspar Wister, of Philadelphia. The next place of meeting fixed upon was Louisville, Kentucky.

The Committee on Prize Essays reported that they had received but three essays, of which two were approved as worthy of prizes. The first, entitled "On the Clinical Study of the Heart's Sounds, in Health and Disease," was found, upon opening the sealed packet, to have been written by Dr. Austin Flint, Sen., of Buffalo. The second, "On Vision, and some of its Anomalies, as Revealed by the Ophthalmoscope," was, in like manner, found to have been contributed by Dr. Montrose A. Pallen, of St. Louis. This is the second time that Dr. Flint has received the first prize, and the third time that Buffalo has had the honor of producing the successful candidate,—Dr. Hamilton having once carried away the first prize.

There was no report from the Committee on Medical Education, of which Dr. Norris, of Philadelphia, was Chairman.

Dr. Palmer, of Michigan, made a report on Medical Literature, which will claim our attention hereafter. From the Special Committees numerous reports were received; among which, besides several upon Epidemics, may be mentioned one from the pen of Dr. Bemiss, of Louisville, "On the Influence of Marriages of Consanguinity upon Offspring;" one on "Spontaneous Umbilical Hemorrhage of Newly-born Infants," by Dr. Foster Jenkins; one by Dr. Stephenson, of New York, on "Cataract, etc.;" and one by Dr. Campbell, of Augusta, on "Nervous Concomitants of Febrile Diseases." Several voluntary papers were also presented, and referred to a special committee, with authority to send them to the Committee of Publication.

The amendments to the constitution, proposed at the last meeting, were all rejected. We believe, however, that the Association will, one day or other, see the propriety of one of the modifications thus voted down, and will consent to its adoption. We refer to the proposition to amend so as to allow of the appointment of one permanent Secretary, whose duty it shall be to attend all the meetings, and preserve the archives of the Association.

The profession and citizens of Washington entertained the delegates with princely munificence, and the most generous-hearted hospitality. Besides a special reception at the White House, and one by the Hon. Mr. Douglas, and evening parties by Drs. May, Tyler, Riley, Miller, Johnson, and Garnett, an excursion was provided to Mount Vernon, the day after the adjournment, and this was followed by a magnificent *planked-shad dinner* on the banks of the Potomac, within sight of the house of Washington.

We regret that the Association again stultified itself in selecting the presiding officer from among the physicians of the place of meeting. We are quite sure that a large number of the thinking and more influential members are opposed to the practice, and would have rejoiced if a new era, in this respect, had been inaugurated at Washington, of all places the most fitting for such a change.

Another circumstance struck us with regret, and that is, that the election of officers is not postponed until near the close of the session. If this plan were adopted, the president would always have ample time to acquaint himself with the manner of presiding over such an assembly; and in this way no one can doubt that the business of the Association would be conducted with much greater dignity and despatch. A proposition to amend the constitution so as to admit of this change was offered by the senior editor of this journal at St. Louis, in 1854, but was clamorously voted down at the ensuing meeting.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—The annual meeting of this body was held at Lancaster, on the 26th of May; Dr. John L. Atlee, President, in the chair. The delegates were welcomed in a brief address by Dr. F. A. Muhlenberg. The annual address was delivered by the retiring President. Appropriate resolutions were passed in connection with the announcement of the death of Dr. Septimus A. Ogier, of Chester County, one of the Secretaries, who was killed by a collision with a railroad car, in September last. About forty delegates were present from the following counties:—Beaver, Blair, Carbon, Chester, Lancaster, Montgomery, Philadelphia, Perry, Susquehanna, and York.

Dr. R. La Roche presented a memorial from the Philadelphia Medical Society, founded in 1792, requesting a representation in the State Medical Society; the consideration of which was, after discussion, postponed until next year. An amendment to the Constitution, allowing of the formation of a new County Society for every 200,000 inhabitants, was offered by Dr. H. Carpenter, and laid over.

The Report of the Committee on Meteorology was read, containing a communication from Prof. Henry, of the Smithsonian Institute, in regard to the difficulty of obtaining correct observations upon the electrical states of the atmosphere.

On Wednesday evening, the delegates were handsomely entertained at the residences of Drs. Muhlenberg, Atlee, and Carpenter.

On Thursday, Sanitary Reports were read from the following counties:—Beaver, Berks, Blair, Carbon, Chester, Lebanon, Montgomery, Perry, Schuylkill, and Susquehanna. Biographical notices of Drs. S. A. Ogier, E. Estchell, and R. B. Dilworth, accompanied the Report from Chester County.

The Committee of Publication was directed to print the Constitution of the Society, and the Code of Ethics, with the Transactions of this year. The same Committee reported that the finances of the Society had not admitted of the publication of the form of Record for private medical statistics referred to them at the last meeting; which was therefore again referred with the same discretion.

Drs. Condie and Emerson were continued a committee to procure a supply of original vaccine virus.

The President and other officers of the Society were continued as a committee to extend the organization of the profession throughout the State.

The following gentlemen were elected officers of the Society for the ensuing year:—*President*, Dr. Smith Cunningham, of Beaver County. *Vice-Presidents*, Drs. Henry Carpenter, of Lancaster, Isaac Lefever, of Perry; William Carson, of Montgomery; and W. H. Gunkle, of Chester County. *Corresponding Secretary*, Dr. James Carson, of Philadelphia. *Recording Secretaries*, Drs. Henry Hartshorne, of Philadelphia, and John K. Raub, of Lancaster. *Treasurer*, Dr. R. P. Thomas, of Philadelphia. Besides Censors and Delegates to the American Medical Association, three gentlemen were also appointed to represent this Society in the Convention to meet at Washington in May, 1860, to revise the Pharmacopœia.

An amendment to the Constitution was unanimously adopted, altering the time of the annual session to the second Wednesday in June.

The Society adjourned at noon on Thursday, to meet at Philadelphia next year.

After the adjournment, carriages conveyed the delegates to the Franklin and Marshall College, to the Lancaster County Normal Institute, and to Wabank; where an elegant entertainment awaited them, as the guests of the Lancaster County Medical Society: a most agreeable termination to the labors of a Convention whose only subject of regret was the smallness of the number in attendance.

CONSULTATIONS WITH HOMŒOPATHS.—Much remark has lately been elicited in the medical circles of London, as well as among the members of the profession generally in Great Britain, on account of the fact that several physicians and surgeons of high standing in the British metropolis are in the habit of meeting homœopaths in consultation. It appears that Mr. Fergusson is one of those who have rendered themselves particularly conspicuous in this respect. In a card, however, published a short time ago in one of the London Journals, he denies that he is in the *habit* of consulting with these men, but admits that he does not hesitate to meet them in all cases of emergency, on the ground that it would be contrary to the dictates of humanity to let a patient suffer simply because he was under the care of one of these practitioners. With all deference to the Queen's surgeon, we think him decidedly wrong in this opinion; nay, we go farther, and assert that any man who entertains such a view is totally ignorant of the fundamental principles of medical ethics and sadly unmindful of the duty he owes to his profession. What, forsooth, has suffering humanity to do in a matter of this kind? Is it not more probable that the great lever which moves to such a disgraceful violation of ethics is the expectation of a fat fee, or a dread to disregard the influence of the wealthy and influential? If his Grace, the Duke of Shetland, breaks his leg, and is fool enough to employ a homœopath until mortification has taken place, is it incumbent upon Mr. Fergusson to go to his relief when he is requested to do so, without declaring that he cannot meet his attendant, and that he will not recognize him in the case in any form or manner whatever? No practitioner is guilty of inhumanity who respects his own dignity and honor under such circumstances. His Grace need only dismiss the so-called doctor; the path is then clear, and any man may step in and occupy it. To consult with a homœopath is to place ourselves on a par with him; if the surgeon amputates a leg for him, and the after-treatment is confided to his care, it plainly implies that the surgeon has confidence in his skill and judgment, otherwise he would not allow the case to remain in his hands. What stronger endorsement could he give the quack? We are rejoiced to find that the profession of London has taken this matter in hand, and is determined to single out these friends of homœopathy. Let them take a bold stand upon the subject, and signally rebuke these men for the inconsistency and palpable impropriety of their conduct. The higher their position the more reason is there why they should be censured. An honorable physician should consider his profession as sacred as the person of his wife; he should no more think of coquetting with homœopathy than a virtuous husband should think of introducing a harlot into the domestic circle. It is an unclean thing, and should not be touched.

We believe this practice of consulting with homœopaths is not peculiar to our English brethren; indeed, we know it is not, for we have authentic information of the fact that the same offence has occasionally been perpetrated in this country. The instances, however, have been few, and we recollect no case where the outrage has been committed by a physician occupying a high professional position. What is more surprising still is that a State Medical Society, one of the oldest in America, should harbor homœopaths among its members. Can it be true, as is alleged in the May number of the St. Louis Medical and Surgical Journal, that the Massachusetts Medical Society is guilty of such an outrage? Our cotemporary asserts it as a "well-known fact," and justly adds that it is a blot on the fair name of this ancient and *once* honorable body.

RESIGNATIONS AND APPOINTMENTS IN MEDICAL SCHOOLS.—Dr. J. C. Nott, Professor of Anatomy in the University of Louisiana, has resigned the chair which he so ably filled last winter, and has been succeeded by Prof. T. G. Richardson, thus rendering vacant the Chair of Anatomy in the Pennsylvania College.

Professor Austin Flint has accepted the Chair of Clinical Medicine in the New Orleans School of Medicine. He will, however, retain his residence at Buffalo.

Dr. Sanford B. Hunt, in consequence of his retirement from the profession, has resigned the Professorship of Anatomy in the University of Buffalo, in which he is succeeded by Dr. Nichols, of that city.

Dr. J. C. Chisholm has been appointed to the Chair of Surgery in the Medical College of South Carolina. rendered vacant by the retirement of Professor E. Geddings. The Chair of Practice in the same institution, vacated by Professor Dickson, has been filled by the appointment of Dr. P. C. Gaillard.

Dr. S. G. Armor, of Dayton, Ohio, one of the most able and elegant lecturers in the Great West, has resigned the Professorship of Pathology and Clinical Medicine in the Missouri University.

SHELBY MEDICAL COLLEGE. — We perceive from a circular just received, that a new Medical School will be opened next autumn, at Nashville, Tennessee. The session will commence on the 1st of November, and terminate on the 1st of March ensuing. The Faculty, whose names, however, are not yet announced, is to be composed of seven professors, the branches to be taught being such as are usually included in the courses of lectures delivered in this country. The circular is signed by Dr. John P. Ford, one of the most distinguished physicians of Tennessee, as Dean. The report is, that his associates are to be Dr. Haskins, of Clarksville, Dr. Atchison and Dr. Calendar, of Nashville, and Dr. May, of Washington City, with two other gentlemen whose names have not transpired. With such a Faculty, Shelby College cannot fail to obtain speedy distinction. Dr. Haskins is one of the most able chemists in the Southwest, and is well known by his valuable contributions to medical science. Dr. Atchison has long enjoyed a high reputation as a practitioner, and Dr. Calendar, although a recent graduate, is a young gentleman of great professional promise. The Trustees have been fortunate in securing Dr. May, whose character as an accomplished surgeon, a skilful operator, and an eloquent teacher is well known throughout the country.

INAUGURATION OF THE JENNER MONUMENT.—We see from the *Medical Times and Gazette* and the *Lancet*, that on Monday afternoon, the 16th of May, a meeting of some of the nobility and most eminent men in the medical profession, was held in the library of the College of Physicians, to inaugurate the statue of this eminent and immortal man. The attendance was large, and included about three hundred medical gentlemen. Prince Albert presided, and, on taking the chair, delivered a short and appropriate address, in which he eulogized Jenner as a great philosopher and philanthropist, as having done more to save human lives than any man of any age. Several other gentlemen addressed the meeting, and the Honorary Secretary, Mr. G. V. Irving, read the report of the Committee, in which special reference was made to the contributions to the fund from other countries. "America, with her usual energy, early took the lead, and chiefly through the zealous activity of Drs. Jackson, Ware, and Warren, of Boston; and those of Drs. Dunglison, Mütter, and Wood, of Philadelphia, speedily transmitted subscriptions to a large amount." The meeting terminated by passing resolutions, including votes of thanks to foreign nations for their support in the movement, as well as to the sculptor, Calder Marshall, R. A., the Committee, the Honorary Secretary, and the Chairman. The statue is made of bronze, and represents Jenner seated in a chair, in an easy position. The likeness is admirable, and the expression is that of a man in a thoughtful mood. It is placed in Trafalgar-Square, on the right of the statue recently erected to Sir Charles Napier.

BI-MONTHLY ABSTRACTS. — Under this title we propose hereafter regularly to furnish the readers of the Review with an account of the more interesting and important novelties that may reach us, from time to time, in our foreign Continental Exchanges. The department will, for the present, be under the direction of Dr. Emil Fischer, of this city, whose scholarship and judgment eminently qualify him for the position.

In consequence of the introduction of this new feature into the journal, and the large amount of original matter, our regular Periscopic selections have been excluded. They will be resumed in the September number.

JUNIOR EDITOR OF THE REVIEW.—The Senior Editor takes pleasure in announcing that his colleague, Dr. T. G. Richardson, has been appointed to the Chair of Anatomy in the Medical Department of the University of Louisiana, vacant by the resignation of Dr. Nott, who has resumed his practice at Mobile. Dr. Richardson, during his brief sojourn in this city, discharged the duties of his Chair in the Pennsylvania Medical College with signal ability, and made many warm personal friends, both in and out of the profession, who deeply regret his departure. They are consoled, however, by the fact that the field upon which he is about to enter is one of great honor and usefulness, affording him ample scope for the exercise of his talents as a teacher, writer, and practitioner.

The removal of Professor Richardson will in no wise interfere with the interests of the Review; on the contrary, it is believed that it will augment both its usefulness and its influence. Connected as he now will be, by virtue of his Chair in the University of Louisiana, with the Charity Hospital at New Orleans, one of the greatest eleemosynary institutions of the kind in America, it will be a part of his business to furnish for the Journal, from time to time, extended reports of what he and others may see and do in that establishment. In this manner, and by his influence in obtaining new collaborators, the Journal, while it will be made the vehicle of contributions full of interest to Southern practitioners, because illustrative of Southern diseases and Southern modes of practice, will assume still more of that broad, national character to which it originally aspired, and which, through the ability of its collaborators, including some of the best talent and erudition of the country, and the distinguished liberality of the enterprising publishers, it is no vain-boasting to declare, it has already attained. The arrangement of the matter, the correction of the press, and the editorial correspondence will hereafter be performed by the Associate Editor, S. W. Gross, M.D.

NECROLOGICAL NOTICES.

DEATH OF DR. ROBERT HARE.—The death of this eminent man took place in this city on the 16th of May, in the seventy-seventh year of his age. Even as a young man he made his name known throughout the whole world by his brilliant discoveries. He held the Chair of Chemistry in the University of Pennsylvania for nearly thirty years. As a lecturer he was not brilliant, but always conducted his experiments on a grand scale. Besides his contributions to science through the journals of the day, he wrote very little; his "Compendium of Chemistry" not being a systematic treatise, but merely a textbook for his students. During the last few years he had labored under a mental delusion concerning "Spiritualism," in which he was a firm believer. At the meridian of his life, Dr. Hare was undoubtedly the first chemist that this country has ever produced.

JOHANNES MULLER, M.D., Professor of Physiology and Anatomy, died suddenly, while asleep, at Berlin, on the 28th of April, in the fifty-sixth year of his age. He was the author of an admirable work on "Physiology," which was translated into English by Dr. Baly, of London, and afterwards edited, with some modifications, by Dr. John Bell, of this city. He also produced a treatise on "Cancerous Formations," and contributed largely to German medical literature. Having always been regarded as authority on physiological subjects, the loss of such a man is truly to be lamented.

PROFESSOR MAUTHNER, RITTER VON MAUTHSTEIN, Director of the St. Anne's Children's Hospital, Vienna, recently died of meningitis, in the prime of life. He was an accomplished and hospitable gentleman, and always took great pleasure in showing kind attentions to Americans stopping at, or passing through, the Austrian Capital. He was well known as an author, having written on "The Medicinal Power of the Cold Water Douche and Mineral Waters," and on the "Diseases of the Brain and Spinal Cord of Children." His last production was the "Diatetics of Children," which has gone through several editions, and has met with a French translation. Periodical Medical Literature owes much to his pen, having contributed largely to his *Journal für Kinderkrankheiten.*

AFTER a lingering illness, DR. WILLIAM GREGORY, Professor of Chemistry in the University of Edinburgh, died on the 24th of April. Dr. Gregory stood in the foremost rank of the chemists of his age, having been a private pupil of Liebig, and a translator of several of his works, as well as the author of several standard treatises. His father, James Gregory, was the distinguished Professor of Medicine in the same University, and he himself successively taught chemistry in the Andersonian Institution, Glasgow; King's College, Aberdeen; and in the University of Edinburgh. With the latter institution he had been connected for fifteen years.

ON THE same day, the Medical Profession of Ireland sustained a great loss in the death, by apoplexy, of DR. ROBERT HARRISON, Professor of Anatomy in Trinity College, Dublin. For forty years, and up to the day of his death, he was an able, fluent, and popular teacher of his branch, and for a long while well known by his treatise on the "Surgical Anatomy of the Arteries," which, at the time of its publication, about 1830, was the best production of the kind in the English language. He was also the author of the well-known "Dublin Dissector."

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An Essay on Wasting Palsy. By William Roberts, M.D., Physician to the Manchester Royal Infirmary. 8vo. Churchill: London, 1858.

Congrès d'Ophthalmologie de Bruxelles. Compte-Rendu, publié au nom de Bureau. Par le Docteur Warlomont. Session de 1857. 8vo., pp. 492. Victor Masson: Paris, 1858.

Evil Results of Over-Feeding Cattle. By Frederick James Gant, M.R.C.S., etc. pp. 39. Churchill: London, 1858. (From the author.)

THE

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SEPTEMBER, 1858.

Analytical and Critical Reviews.

Art. I.—*Urinary Deposits; their Diagnosis, Pathology, and Therapeutical Indications.* By Golding Bird, M.D., F.R.S. Fifth Edition. Edited by Edmund Lloyd Birkett, M.D., Caius Coll. Canterb., Fellow of the Royal College of Physicians, etc. etc. etc. 8vo. pp. 494. London: John Churchill, 1857.

The name of Golding Bird is to be added to the list of physicians who have died of diseases which have been the subjects of their own peculiar study. Of this kind of coincidence, Corvisart and Laennec are better known examples, and the list might be further extended. It is scarcely possible that the habit of fixing the attention upon a given organ, as the lungs or kidney, should predispose that organ to disease; or yet further, should actually create a pathological condition. It is more possible that the consciousness of the weakness of an organ, or of hereditary tendencies to a particular malady, should give specific direction to the studies of a physician. It is most probable, after all, that the coincidence alluded to is entirely accidental.

Apart from the fact which we have just mentioned, the early death of the accomplished author of the volume before us was calculated to excite the sympathy of all men who respect great talent, and esteem that lofty industry which is fruitful of good results, and never weary of well-doing. In the words of his editor—"His time and strength, both of body and mind, were given to the profession, and he reaped, as a natural consequence, its highest rewards; but those who knew him best, felt that he had brighter hopes beyond, which supported him through a life of sickness, and comforted him at its close."

The volume under review is the principal literary result of his labors in a branch of medicine which he undoubtedly has done more to make familiar to the profession generally, than even some of those who, like Prout and Becquerel, have been more productive of highly original results. The first edition of this work was published in 1843, and was chiefly founded upon papers and lectures, which originally appeared in the *Medical Gazette* and in *Guy's Hospital Reports.* This edition was reprinted in this city, in 1844, by Lea & Blanchard, and has passed through several later editions, both here and in London. Of the copy before us, the fifth English edition, we have as yet had no reprint here. When such a one is published, we hope to witness some effort towards imitating the luxury of type and illustration which distinguish the medical manuals of the English house of Churchill from the Cisatlantic reprints.

Let us pause here to state that we are no advocates of the plan of republishing foreign books without the sanction of the author, and without compensation for weary hours, stolen from the turmoil of professional life, to devote to the tasks of authorship. This is bad enough; but we might, at least, afford to gild the bitter pill. It is hard, indeed, to steal a man's plate, but to melt it into ugliness and past recognition, is rather worse. It would, indeed, be a wise English author who would know his own book in its Yankee costume. As to American editions of those aristocratic Sydenham and Cavendish Society books—they are enough to set one's paper-cutter on edge. When shall we learn that men's brains are not umbrellas—are not everybody's property?

Happily for us, we propose to review the last, the fifth English edition, with the editorial notices of Edmund Lloyd Birkett. This stout and handsome octavo manual is the latest summary of our knowledge in regard to the Urine. It now lies upon our table, side by side with a dozen volumes which record the progress of this branch of medicine since it was derived from the Arabs, and assumed such undue importance in the hands of the Urine Casters in the 15th and 16th centuries.* These gentry seem to have been the homœopaths of their day—nay, they were, to a minimum extent, better than these; for, in place of giving little doses, they gave none at all—beyond which degree of perfection it does not seem to us that the globulist can go, even with the aid of a world grown grayer by three centuries. In despite of the war to the scalpel which the regular profession waged against these quacks, the practice of Uroscopy not only continued to be popular, but so fashionable, also, that at some of the German Courts an official examiner daily inspected the water of the reigning sovereign. Some of the books of these personages are amply amusing, and it is interesting to notice the succession of them, under divers names, until they appear in yellow-covered descendants of to-day, as books of advice to the young, etc. etc. The Urine Casters no longer write books, and, in fact, are with us rather rare curiosities. Uroscopy is no longer profitable, and we have, in its place, the advertising Doctor, who, however, in despite of his yellow tracts, is deserted by the muses, who once aided the Urinary Doctor. Indeed, many old books on Urine Casting contain verses complimentary and flattering, from the patients of the lucky Doctor. M. Davach de la Riviere appears to have been highly favored in this way. One of his clients invites us to

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* "If thou couldst, Doctor, cast
The water of my land, find her disease,
And purge it to a sound and pristine health."
MACBETH.

"Courez donc chez Davach si vous voulez guerir,
Il sçait, voyant l'urine, empecher de mourir."

Certainly a desirable consummation, but, unluckily, no longer attainable, since, as another of his poetical patients informs us,

"Henreux sont les mortels dans le siécle ou nous sommes,
Davach par ses écrits soulage tous les hommes."

Notwithstanding the volume before us, and many others, more or less valuable, we fancy that the profession, in general, still regards this study as unnecessary to complete a medical education. Indeed, we have little hesitation in asserting, that a large part of the mass of medical men are incapable of distinguishing the various urinary sediments, by the eye or the microscope. Yet, if any branch of medicine is, of all branches, the least fitted to become the prey of mere specialists, it is this one—since a good knowledge of the urinary fluids, and of the means for their study, is, we fear not to add, as much an essential to the real physician, as a knowledge of pulmonary complaints and of the uses of the stethescope. When this is to become a recognized part of every complete system of medical training, we cannot say. Already, in some examinations abroad, the candidate is required to use the microscope, and to ascertain with it the character of urinary deposits, of tissues, etc. We are a little fearful, that now and then, among the graduates of this country, there would be found young men of excellent theoretical attainments, but quite unable to tell an écraseur from a microscope.

As an example of this sort of ignorance, or of far worse, we recall an incident which chanced to us a few years ago, and which very well shows the utility of the study we have been recommending, as well as the danger of neglecting one of the plainest and most valuable precepts with which it has enriched the science of surgery.

Some years ago, a patient applied to us for relief from certain vague sensations of uneasiness, and on account of an inexplicable feeling of fatigue which every exertion brought upon him. We discovered that he was suffering from sacchuria. During two years his case was more or less before us, and remained very much the same, neither better nor worse. For reasons best known to himself, he chose to conceal its existence from his family. A year or two afterwards this gentleman died very suddenly, after an operation of no very formidable nature, but which no sane surgeon would have performed had he supposed his patient to be suffering from diabetes. No examination of the urine was even thought of. The symptoms mentioned, were ascribed to the malady which the operation was to relieve, and the patient himself, having adopted a similar view, had failed to mention the existence of a constitutional disease, which he had ceased to regard as of moment. The neglect of a precaution which should always precede an operation of any importance, cost the patient his life, and no doubt greatly puzzled the unlucky operator.*

The excellent little text-book of our author has been so long before the medical public that it would be time lost to analyze its contents very fully; but there are some portions of it which are sufficiently novel, owing to recent additions, to exact this at our hands, and there are others which are invitingly open to comment and discussion.

The first chapter of the volume is intended to assist the student, by giving him a general view of the composition of normal urine, and by teaching him the readiest methods of analyzing this complex fluid, and acquiring a knowledge of its various physical characters. The main object is, of course, to make these examinations possible for men who are actually engaged in business. Something has been done toward attaining this desirable result by the application of volumetric analysis to the determination of the quantities of the urinary compounds. It is neither possible here, nor requisite, to state the details of these operations; but how successfully they have been used may be seen by a reference to the recent prize essay of Dr. Hammond. The best statement of these methods is to be found in the first two numbers of Dr. Beales' new journal, *The Archives of Medicine*, where they are so minutely detailed as to make it possible to conduct them with success. We scarcely can say as much of the quoted description of them in the work before us.

Besides this method, which may be made a very accurate one, Heller has proposed another which answers well enough for most clinical purposes, although it can never be applied to the collection of physiological facts. As every chemist knows, when urine is partially evaporated, nitric acid will throw down its urea. Without evaporation a strong acid will precipitate the uric acid, and when the urine is warmed will act upon its pigments. Again, nitrate of silver precipitates the chlorine of the common salt in urine, and baryta salts produce insoluble sediments with the sulphuric acid of this fluid. Now, as we have hinted, these reactions are made accurate use of in volumetric analysis. If, however, we do not require perfect results, we may use these reactions to good purpose by always working with known, and the same quantities of the urine, and with test solutions of constant strength. By this means, and by often testing normal urine, the eye at length becomes so accustomed to estimate quantities from the bulk and appearance of precipitates, that it is usually easy to detect any important deviations from the healthy standard. Having no intention of ignoring the more accurate means, we still think that, by a little practice, the rough analysis just sketched may be made of much clinical use. Any one who has observed the accuracy with which a skilled hand at blow-pipe analysis will guess at the per centage result from the size, etc., of the bead or globule left upon the charcoal, will scarcely be surprised that we should venture to advocate the limited use of processes to all seeming so inaccurate.

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* The remarks of Bence Jones upon this subject refer chiefly to the existence of Bright's Disease. They admit of a more general application.

At the close of the first and second chapter the editor refers to the value of the microscope in the study of the urine, in health and in disease. We may as well state here our conviction, that no man can be a completely accomplished physician who neglects its aid, and that without it some diseased conditions of the urine are utterly out of his medical view. It is quite unnecessary to possess an expensive instrument for these purposes. Indeed, a microscope of sufficient power can easily be had for from twenty-five to forty dollars.* The student will find the general directions at the close of Chapter II. of great utility. Our author's remarks upon the general worthlessness of the urinometers sold in the shops we heartily endorse.

The third chapter treats of the chemical physiology of the urine, and, after discussing its acidity and classifying its ingredients, passes on to the account of each one of them, commencing with urea, the most important of all. One point arrests us in regard to the acidity of the urine. The editor believes, with Bence Jones, that the acidity of the urine holds a direct relation to that of the stomach. Thus, the urine is stated to be most acid when the contents of the stomach possess the greatest acidity, and

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* Such glasses are to be had of Mr. Queen and of Mr. McAllister, of this city.

vice versa. Immediately before each meal the urine always showed the greatest acidity. Now we have long labored under the idea that, just before most of our meals,—when these were separated by some hours,—the stomach either had no contents, save mucus, or had contents which were quite neutral until the irritation of new food called forth a fresh supply of gastric acid from the secreting glands. Again,—and here we reduplicate the puzzle,—if the amount of acid in the stomach regulates that in the urine, are we to regard the two acids as identical? and if not, what part does the intervening alkaline blood play? and if the acids are not the same, must we borrow a therapeutist's term, and state that the presence of acid in the stomach acts as an alterative upon the quantity of another acid present in the urine? Our author and his editor do not mention the experiments of Claude Bernard upon this subject. He has shown definitively, as it appears to us, that a nitrogenous diet, persisted in for a time, invariably yields an acid urine, as does the mere metamorphosis of tissues in starving animals; while, on the other hand, a non-nitrogenous diet gives rise to an alkaline state of the secretion in question. (See Bernard, Leçons de Physiologie; Semestre d' été, 1855.)

A considerable share of this chapter is taken up with the physiological relations of urea and uric acid. The editor has done very little for this portion of the book. Indeed, neither he nor the author have treated it so fully as its great importance demands, and both of them have entirely ignored the papers which have been written in this country, and which, although not numerous, are otherwise well entitled to notice. Irrespective of this culpable omission, the arguments against the views of Prof. Liebig are excellently stated, although in some points defect of research has committed the author or editor to certain rather doubtful statements. It is easy to indicate the main points in this question without too tediously elaborating our views.

Since urea and uric acid are both found in the urine of man, and since the one or the other is always to be detected in the urine of animals, it was supposed by Liebig that these two important excretives held to one another a remarkable relation. "He believes that when, in the exhausted tissues containing protein, (*i.e.*, albuminous structures,) the vital force is no longer able to resist the chemical action of the oxygen which is conveyed to them in arterial blood, it combines with their elements, and forms products, among which uric acid is the most important. Thus the elements of one atom of the essential ingredients of all muscular and fibrous tissues, (protein,) with ninety-one atoms of oxygen, are equal to the elements of uric acid, carbonic acid, and water. If, then, sufficient oxygen and water be conveyed in the arterial blood, the greatest part of the uric acid may be converted into carbonic acid and urea, so that the effete nitrogenized elements of the tissue reach the emunctories in a soluble form, a condition necessary for their ready excretion." Now, as both urea and uric acid exist in the blood, it becomes plain that, on the above-stated hypothesis, the larger the amount of oxygen circulating in the blood, the more complete will be the conversion of uric acid into urea. Thus, if the supply of oxygen is abundant, and the circulation active, the urea will be increased, and the acid lessened. Accordingly, the urine of serpents contains no urea, and a large amount of uric acid. Again, the urine of lions, tigers, dogs, etc., all active carnivoræ, does not contain any appreciable quantity of uric acid, and here the oxidation of tissues is supposed to be so complete as to transform all of the uric acid into this more soluble substance. If, then, the relative activities of various animals, as enabling them to take in more oxygen, be of moment in this connection, it follows that in man, whose urine contains both urea and uric acid, exercise should increase the oxidation of tissues, and thereby augment the urea, while inactivity should produce a directly opposite result. Accordingly, many researches have been instituted to solve the problem from this point of view. The results of Dr. Hammond's researches certainly seem to indicate the correctness of Liebig's ideas. Dr. H. found that exercise invariably increased the urea, and lessened the amount of uric acid. Unfortunately, other observers, especially Draper, are unable, after like researches, to support his results. Prof. Lehman has also shown that exercise increases the actual amount of urea in the urine, but he has not pointed out its varying relation, in this case, to the quantity of uric acid.

As an accessory to Liebig's theory, it has been stated that all highly carboniferous food should diminish the urea, and increase respectively the uric acid; because, when the body is loaded with materials easily oxidized, like the kind of diet alluded to, too little oxygen remains unemployed to effect the conversion of the uric acid into urea. This part of the question has also been answered in many ways. Thus Lehman has shown that a vegetable diet, and one quite free from nitrogen, decreases, and animal diet increases the amount of uric acid. Also, that the urea increases and decreases in a similar manner under these same circumstances. Dr. Frick, in stating the argument, in his book on *Renal Deposits*, thinks that these observations should be thrown out as evidence, because they stand alone,—a singular reason,—and because the whole amounts of the various excretives, as stated by Lehman, are so large as to excite distrust. He himself so entirely accedes to Liebig's views, that he thinks if man were in perfectly normal conditions, he would secrete nothing but urea, whence it would be clear enough that our first father, at least, did not suffer from the calculous diseases which, along with other plagues, his misdemeanors have entailed upon us. In confirmation of Liebig's views, Dr. Frick also states that those convicts in the Baltimore penitentiary who led sedentary lives always excreted a great excess of uric acid, and that in proportion to the amount of exercise which they took was the decrease of this compound, and the increase of the urea. He also states that, when he gave cod liver oil to one of the active class, the urea fell off, and the uric acid increased. Dr. Frick is further of opinion that purgatives increase the urea excreted, by carrying off food and bile, which otherwise must have been oxidized in the body, and so have deprived the uric acid of the oxygen necessary to form from it urea.

Beyond these facts, if facts they all be, we have but little evidence of the presumed chemical relationship of urea and uric acid. We are not able, however, to go so far as our author, and state that *we have no proof of any kind* that uric acid is a necessary transition formation between protein compounds and urea, since Wohler and Frerichs have shown that the introduction of uric acid into the veins, or the primæ viæ, is followed by an increase of the urea and oxalate of lime in the urine—a decomposition which can be artificially imitated by acting upon uric acid with peroxide of lead.

Perhaps, however, there is nowhere else a piece of evidence for this theory so strong as one furnished by Dr. Hammond. (*Am. Journ. Med. Sci.*, Jan. 1855, p. 119, *et seq.*) This observer examined the urine of a black-snake, and satisfied himself that it contained no urea, and an abundance of uric acid. He then introduced into the jar which held the snake, a large amount of oxygen gas. This was repeated thrice a day for a week. The gas greatly excited the snake, but he became sluggish when the supply was withdrawn. The excrement passed during this time contained an abundance of urea as well as of urates.

The opponents of Prof. Liebig's theory have made out a very strong case against his views; and certainly we can in no way comprehend, from his point of sight, why the very active bird and insect, with fluids rich in oxygen, should excrete only uric acid like the inactive, slowly-breathing serpent. The researches of Magendie, Lehman, and Boussingault, cast further doubt upon the views of Liebig, and we are only able at last to say, with an approach to certainty, that both urea and uric acid are products of the disciplined decay of nitrogenous tissues—that one can replace the other completely in different animals, but that we are still in the dark as to the exact role which they play in relation to one another, and to the retrograde changes of tissues where both are found in the urine at once, as in man.

Upon the whole, after carefully reviewing the evidence, we incline to think that, while urea and uric acid are nearly connected links in the chain of regressive metamorphosis, and while uric acid is convertible into urea within and without the body, we are not as yet in possession of all the conditions which make this change easy or possible. Certainly the amount of oxygen present is not the sole governing agency.

The physiology of the urine is further dealt with by our author under the headings of the various remaining excretory compounds, as lactic acid, creatine and creatinine, hippuric acid, and butyric acid.

As regards the coloring matter of the urine, Bird makes out but little that is satisfactory. Simon thought it was hæmaphæin, the pigment of blood serum. Prout supposed that two urinary pigments existed. It is the halophyle of Berzelius, and the uroxanthin of Keller, who believes that, when oxidized, two other coloring matters arise from it—namely, uroglaucin, and uri-rhodin. These our author states to be identical with what he has called purpurine. If we remember aright, Keller also distinguishes a second normal pigment, which he terms urophœin, and to which he ascribes both the smell and reaction of the urine of health. It is easy to see, from this brief summary, how just is the statement of Lehman, that we know nothing at present of these singular compounds. We, ourselves, are inclined to think that every pigment in the body is due to changes in the blood corpuscles; and so far, indeed, as the urine goes, the evidence in favor of this view is very strong.

Ammonia and the fixed salts of the urine last occupy our author's attention. He next proceeds to classify the deposits which occur in urine; a portion of the volume demanding neither quotation nor criticism.

Chapter fourth is devoted to what our author terms lithic uria; and, although it has been objected that the deposit is more rarely a disease than a mere symptom, the terms lithic uria, oxaluria, etc., seem to be so convenient, and to have gained so firm a foothold, that it is useless to quarrel with them even if it were desirable. The chapter before us is a most admirable summary of our present knowledge upon the subject of lithic acid. If our author and his editor had taken the trouble to glance at the journal-literature of this country, they would have acquired some additional knowledge of some of the phenomena connected with the crystalline forms of uric acid; though, excepting this, we can only praise the clearness and completeness with which the subject matter is handled. As usual, the editor has failed to fulfill his task, and we find no allusion to the singular deposits of uric acid so often found in the kidneys of children at birth. Again, when examining the various means of rendering the urine alkaline or acid, we hear nothing of the valuable information upon these points to which we have before alluded, and which teaches us that a persistent vegetable diet will, in the end, cause the urine to exhibit an alkaline reaction, while animal food has a directly opposite effect. We are also struck with the fact that, after admitting that the exhibition of benzoic acid does not affect the quantity of uric acid present in the urine, our author proceeds to tell us, in the next page, that benzoic acid does limit the quantity of uric acid to be found in the fluid in question.*

The succeeding articles upon uric oxide and cystine, are of but little interest to the practical physician. We are struck, however, with the comparative rarity of cystine, as a urinary deposit, in this country; for, although we have repeatedly sought for it in the urine of chlorotic females, we have never met with it, either in these cases or in any of the numerous examinations of this fluid which we have made during the last five years. Dr. Frick, of Baltimore, has met with but one case, and we know of no record of any in our home journals.

The next subject of general interest which attracts our notice is the chapter upon the chemical pathology of oxalate and oxalurate (?) of lime. We confess that we are disposed to accept here the author's term oxaluria, and admit, at the same time, the existence of a particular pathological state, with features well enough marked to entitle it to this distinction. The editor of Dr. Bird has very well defended his author against those who do not believe in the existence of any disease entitled to be named oxaluria, from what they regard as but one symptom of several diseased conditions. We ourselves are willing to go beyond Dr. Bird and his editor also. In most of the cases where oxalic acid occurs largely, or even steadily, in the urine, there is a peculiar state of the general system, which we take to be a result of the existence of oxalic acid in the blood or tissues, or both. Whether it is generated in the blood itself or in the stomach is of little moment. The symptoms which our author describes will, in these cases, present themselves, and we shall have as constantly a deposit of oxalate of lime in the urine. Since, therefore, we comprehend distinctly what is to be included under the term oxaluria, and since, when one physician speaks to another of oxaluria he is not likely to be misunderstood, we can have no great objections to the term. It certainly hints at the presence of oxalic acid in the body, and this we consider as the real central evil in most of the cases described as oxaluria with dyspepsia.

After tracing the history of the subject, Dr. Bird declares, as regards the importance of deposits of oxalate of lime, that they are of more frequent occurrence than those of earthy phosphates—a statement which is certainly true in this city to a remarkable extent.

The next section treats of the microscopic and chemical examination of the oxalate of lime, and does justice to the careful essay of Dr. Bacon, of Boston. As regards the size of the crystals of oxalate of lime, we would refer our readers to a short paper in the *Medical Examiner*, by Dr. Francis Lewis, who is of opinion that this deposit is very common in the urine of the black race, and that in them the crystals are of unusual magnitude, as his measurements show. No one whom Dr. Bird quotes has been able to obtain large and perfect crystals of the oxalate similar to the octohedrals found in the urine, nor does he mention the only ready mode of forming them. Two German observers have succeeded in producing very interesting results with other substances than the oxalate, by causing them to unite very slowly and gradually. We have imitated their processes in part, and have succeeded in obtaining good octohedra of oxalate of lime by placing a solution of nitrate of lime or of chloride of calcium in one vessel, and a weak solution of oxalic acid in another, a bent tube of a V shape, inverted, being filled with water and inserted in both solutions. The two fluids gradually permeated the water, and after a few weeks, fine crystals of an octohedral form were frequently obtained. Just before this, Dr. Jones, of Georgia, also procured very fine crystalline varieties of this salt, by allowing oxalic acid and soluble lime salts to mingle slowly, by permeation, through the tissues of living animals. We have found that similar and very beautiful results may be arrived at by placing the two substances on different sides of a dead membrane and allowing endosmotic currents to occur. By this means many substances which usually appear as mere granular precipitates may be obtained in well-formed crystals.

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* Ure, Professor Booth, etc.

The origin of oxalate of lime in the urine is discussed by our author with remarkable acuteness. It has been doubted that oxalic acid could find its way from the stomach or from the tissues, when generated there, through a fluid like the blood containing lime salts. This doubt is due to the fact that oxalic acid, outside of the body, always seizes upon any lime which may be present, and falls as an insoluble oxalate of that base. This doubt was aided by the experiments of Scherer and others, who have discovered that oxalate of lime, *i.e.*, oxalic acid, is sometimes generated in urine by a process of fermentation. It is uncertain, however, what element of the urine undergoes destruction to produce the acid in question. Against all this, it may be urged that, when oxalic acid is taken in food, as in tomatoes, etc., it does reach the urine. The proof is absolute; and, if it can pass from the stomach to the urine, it can also pass from the tissues to that excretion. In the next place, Dr. Garrod has found the oxalate in blood. Now, whether it be due to a metamorphosis of tissue, or of the excess of nutritive matter in the blood, or to a decomposition of uric acid, we still have this unsolved difficulty as to the passage through the system of an acid which has so obstinate a tendency to form an insoluble salt of lime.

The assumption of Dr. Schmidt, of Dorpat, that the oxalate exists in the blood in the form of a soluble triple compound with albumen, has no kind of foundation. Dr. Bird, indeed, states that such a compound exists in yeast-cells, and that their decomposition sets it free. More probably the oxalic acid thus set at large is a result of the putrefactive changes in the yeast, and we are, therefore, still in the dark as regards this matter. So far as we can decide, our author regards all persistent deposits of oxalate of lime as evidence of a departure from health. Considerable experience has taught us how nearly correct are these views as stated in the following paragraph:—

> "It is impossible to connect any definite set of symptoms with *all* cases in which the oxalate of lime appears in the urine; indeed, persons will often go about their ordinary duties, in apparently fair health, for a long time, and yet be constantly excreting the oxalate of lime. In consequence of this, some persons have actually affirmed that oxalate of lime has no relation with any pathological state of system, and its appearance in the urine is of no consequence. This opinion can result from very limited experience alone; indeed, I am not sure that Lehman, valuable as is his opinion as a chemist, has any claim on our confidence as a practical physician, and he is chiefly referred to as advocating the erroneous view in question."

Dr. Bird divides his cases into *a.* oxaluria with excess of urea and extractive matter in the urine; and *b.* oxaluria unattended with such excess.

We might include under this latter head all cases where the presence of oxalate is due to a diet containing the acid in question. The first class of cases (*a.*) has, according to Lehman, no existence. Our author describes them as exhibiting a set of symptoms, among which irritative dyspepsia, hypochondriasis, etc., are the most marked. We also are equally sure that such instances of general derangement of health, with such symptoms as Bird describes, do often occur, and that the presence of oxalate in the urine is, in a certain class of them, a notable symptom, both as pointing to a disease of assimilation, and to the cause of the local urinary annoyances, which so often co-exist. We are as sure that the presence of urea in excess is in them no constant symptom.

In considering, then, class *b.*, we are called upon to say whether or not oxalate of lime can be considered as a normal urinary constituent. Even admitting, with Scherer, that it may be due to a peculiar fermentation of the urine, we are loathe to believe that a salt which is present only in an insoluble crystalline state, can be regarded as a normal urinary ingredient. It is in vain to add that it is found so often in the secretion of persons in full health, since its constant presence in any urine may give rise to a calculus. Indeed, this most insidious class of cases has been quite overlooked by our author. We have again and again diagnosed the presence of this substance as a renal calculous formation, where no sign of disease existed, except the pain in the back, and the slight urinary deposit. Such cases are very common, for some reason which we do not comprehend, in the rotten lime-stone districts of this country. It is absurd, therefore, to neglect the fact of the existence of oxalate of lime in the urine, upon the presumption of its frequency entitling it to be termed otherwise than abnormal.

As regards the treatment, we feel sure that no one will consider Dr. Bird's cases as satisfactory in the way of absolute cures. All the forms of oxaluria are obstinate, when once established. It is not enough to state that now the urine was natural, or that the oxalate had disappeared, or that such a one was convalescing, in order to prove the permanent value of the means or remedies employed. In fact, the final result of our author's cases may well be a matter of doubt; and, even upon his own showing, the most of them were merely aided, and not fully relieved. For some time back, our own experience has dissatisfied us with the special treatment by acids, as recommended by Prout, upon what we incline to consider rather more than doubtful grounds; since, however, we shall shortly treat this subject in another shape, we shall here urge it no further.

The pathology of the earthy salts, is the title of the next chapter. Very little has been done for this matter since our author's last edition; and, in fact, without some new and striking discoveries, it would be difficult to improve upon Dr. Bird's account of the earthy salts.

The description next given, of pigmentary deposits in urine, is most curious and interesting. Dr. Bird distinguishes as abnormal products, the following pigments:—

Cyanourine,
Uroglaucine,
Indigo,
Prussian Blue,
Melanourine and Melanic Acid,

with a few others, which are gray, or black, and, as yet, unnamed. The first and third of these pigments are in suspension in the urine, the second is in minute granules, and the third is held dissolved. As to the origin of these strange compounds, we may state that the first two are conjectured to be due to some metamorphic change in albumen. Indigo passes into the urine when given internally, but Hassall describes a blue pigment, in Bright's disease, which he thinks is indigo formed within the body. He is merely describing the uro-glaucin of Heller. The sesqui-ferro-cyanide of iron—Prussian blue—occurred in a boy who had swallowed ink. It is said that this deposit may be produced by giving to a patient, who has been taking iron, a few doses of ferro-cyanide of potassium. This appears to us quite possible, since Bernard has shown that iron may be so combined with the albumen of the blood as to be unaffected by the presence of the cyanide of potassium, until both appear in an acid fluid, as urine, or gastric juice; when at once the characteristic reaction takes place and the blue precipitate falls.

Perhaps the most important chapter in the book is that upon non-crystalline organic deposits, p. 338. In it the student is taught the diagnostic value and mode of detecting blood, pus, mucus, epithelia, spermatozoids, torula, kiesteine, albumen, sugar, etc.

A portion of the chapter describes the appearance in the urine of the various elements of the blood. Here we are struck with the difficulty of annotating the text, and yet leaving it substantially unaltered. Even the plates are useless here, because none but the most admirable delineations on steel, or copper, could convey to the eye correct representations of the peculiarities which enable us to tell one kind of tube cast from another. We miss, also, a distinct statement of *all* the circumstances which cause albumen to appear in urine. Some of these, indeed, are alluded to, but we have no discussion as to the absolute diagnostic value of the fibrin casts, under this, or that accompanying group of symptoms. This, the most important part of the volume, remains the worst. Under the headings pus and mucus, we have a few paragraphs devoted to the consideration of treatment. Here, where we should have had a clear and full appreciation of remedies, or else a reference of the whole matter to the monographs which treat of it, we get only a meagre criticism of some of the means employed, with over-praise, as usual, of pareira, and no mention at all of counter-irritants. As regards the local treatment of cystorrhœa, Dr. Bird advocates injections of warm water, and elsewhere, of dilute nitric acid, speaking of no other fluids as available for injecting the bladder. Uva ursi, chimaphila, buchu, etc., we are inclined to believe, are best given in the common form of infusions, hot or cold; and we think that the novel forms of fluid extracts, etc., are not so usefully active.

We are astonished, again, at the meagre details in regard to the various forms of epithelia, which should have been delineated distinctly, as they appear, in different parts of the urinary tracks. It is hardly right to refer the student to Dr. Beale's work on the microscope for what ought to be here.

The section on sugar urine, etc., is better done. Besides the old copper test, (Traumer's,) and the potash test, (Moore's,) we are told of bichloride of tin, (Mauméne,) of chromate of potash, (Harsley,) etc., as new tests. That of Mauméne we have found unsatisfactory. A mixture of sulphuric acid and bichromate of potassa, is said by Luton, to be the best test. The fermentation test is, beyond doubt, the least liable to suspicion, and is only inconvenient when a rapid result is required.

The "physiological and pathological origin of sugar" we should like to copy entire, did space allow of it. It is true that, a l'Anglaise, we hear so much of Dr. Pavy, who has really done something, and so little of Bernard, the parent of the whole subject as it now exists, that we fancy Dr. Pavy must shrink from such undue prominence. As a result, however, of his experiments, and those of others, it is stated that the liver forms a peculiar sugar, which disappears, partly in the lungs, and more completely in the tissues; never being entirely absent, except in the blood of the capillaries of the chylopoietic viscera. Now, in order that the sugar shall undergo destruction in the blood, it is stated that there must be, 1. Presence of molecular change; 2. Exposure to atmospheric air, or oxygen; 3. Alkaline condition of blood The first essential is but lamely made out in the editor's statement, and does not do justice to the original observer. The remaining essentials are better stated. Starting with these, however, our editor—for we presume this section to be his work—proceeds to examine the therapeutical indications and the pathological sources of sugar. Possible it is that we are nearer the light on this matter than we were, but we must confess that, in despite of what we have learned, we do yet but grope with most uncertain steps. We have knowledge; we wait for wisdom.

We are pleased to see that our author adhered to his opinions as to the value of kiesteine as a *corroborative* test of the existence of the pregnant state. We are surprised that it is so rarely looked for as a sign of this condition, and believe that, like the larger part of the study of urine in diagnosis, it is neglected by the mass of the profession. Since the publication of Dr. Bird's first edition, the value of this test has been made more conspicuous, in despite of several papers, chiefly by Continental observers, who deny to it any value. We find no reference, by author or editor, to Dr. Kane's most admirable paper, or to the essays of Drs. McPheeters, Perry, and Elliott—all of them American writers.

Dr. Bird's book winds up with his well known original observations upon the therapeutics of the kidney, and upon the use and value of depurative and alterative agents. The very nature of this portion of the volume renders it difficult to do more than merely refer to it, as being in every way worthy of its author. We would especially call the attention of our confrères in malarious districts to the author's remarks upon renal depuration in the class of diseases which fall most under their care.

Notwithstanding the defects of the volume before us, we cannot close this review without characterizing this book as the best of its class.

It has, indeed, been feared that the increase in the number of books devoted to special subjects, or parts of practical medicine, would have a tendency to produce mere specialists, and that we are in some danger of too great a subdivision of medical labor. We are not aware, however, that this has been the case in the medical profession here, and, in fact, it is hardly likely to be so, since our cities are not large enough to support regular practitioners who attempt to confine themselves to particular kinds of business. Meanwhile, it is certainly useful to find the information upon any one subject condensed into a convenient volume, where knowledge upon a given point may easily be obtained. We have no doubt that any physician becomes a better general practitioner by making himself minutely acquainted with some particular branch of medical or surgical practice. Such a physician, in truth, was Golding Bird, and we are confident that his would be a safe example to set before those who are starting in their professional careers.

ART. II.—*Of Nature and Art in the Cure of Disease.* By SIR JOHN FORBES, M.D., D.C.L. (Oxon,) F.R.S.; Fellow of the Royal College of Physicians, Physician to the Queen's Household, etc., etc. Second edition. 12mo. pp. 261. New York: Samuel S. and William Wood, 1858.*

FOR the long period of fifty years, Sir John Forbes tells us, he has been actively engaged in the practice of medicine; and during much of that time he has been favorably and extensively known by his many able contributions to medical literature. As editor of the *British and Foreign Medical Review*, his essays, reviews, and criticisms were characterized by candor and ability, and not until his celebrated article on "Homœopathy, Allopathy, and Young Physic," in 1845, were the soundness of his views called in question by any considerable portion of the profession. That essay gave rise, at the time, to much controversy, and was considered by many as anything but orthodox. It must be conceded, however, that it reflected the opinions of many practical men in both hemispheres. Every one knows that a new life has been gradually infusing itself into the ranks of the profession. Within the last twenty years a revolution has passed over the face of Old Medicine; and this, if not caused by, has taken place at least coincidently with, the unparalleled advances in the knowledge of the pathology and diagnosis of diseases. To-day clinical medicine is far in advance of our elementary treaties on the practice of medicine, and most sincerely do we thank Sir John Forbes for much of the reformation which has, within the last twelve years, been wrought in the *drugging system.* He has brought to bear, his experience, his learning, and his reputation, against a mischievous polypharmacy, and has endeavored to strengthen the confidence, at least, of the junior practitioner in the powers of nature, to arrest the processes of disease. In this spirit, he desired the present work to be regarded in the light of *"A Legacy to his Younger Brethren;"* and if it only lead to the zealous cultivation of the subject of which it treats, the result, he thinks, cannot fail to be of inestimable value to the cultivators.

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* This is the London edition with an American title page, and to Messrs. Wood is great credit due for the very good habit they are falling into of thus presenting us with foreign works.

> "For," he adds, "on the profounder, more critical, and purer study of Nature, as manifested in disease, rest, in my judgment, the best hopes of improvement in the medical art; and to this study the spirit of my book may, at least, lead the way and give the initiative, if its actual contents are found of lesser importance."

Want of trust in the powers of Nature to cure disease, and too much faith in remedial agents as the sole means of cure, are, in the estimation of the author, the great hindrances to the progress of a safe and rational practice. This error, which has so deeply tainted our medical literature, is combatted throughout the entire work, and the conviction is expressed that it has its origin in ignorance of natural laws governing disease. Hence the first chapter, the starting point of Sir John Forbes's theory of therapeutics, treats of the NATURAL HISTORY OF DISEASES; which very justly forms, in his estimation, the only sure foundation of a scientific knowledge of the medical art.

> "Such has ever been the want of trust in Nature, and the over-trust in art prevalent among the members of the medical profession, that the field of natural observation has been, to a great extent, hidden from them; hidden either actually from their eyes, or virtually from their apprehension. The constant interference of art, in the form of medical treatment, with the normal processes of disease, has not only had the frequent effect of distorting them in reality, but even when it failed to do so, has created the belief that *it did so;* leading, in either case, to an inference equally wrong; the false picture, in the one instance, being supposed to be true; the true picture, in the other, being supposed to be false."

The first half of the volume is devoted mainly to setting forth his views on the nature, origin, causes, mode of termination, course, and treatment of diseases, and especially "how they comport themselves when left undisturbed by any extrinsic artificial influence." The second half of the work attempts to do for art what the first does for nature, viz.: "to exhibit the true character of the medical art, its exact relations to the natural conditions of diseases, and the extent of its power to modify and cure them." In the first division he labors to establish the fact that Nature's power to cure disease "exists in a degree *beyond* the ordinary belief of the public and the younger members of the profession;" and in the second, to establish the correlative fact of the power of art to cure disease, "being greatly *below* the same standard of belief."

The author's general notions of disease are clearly and concisely expressed, and, in an *à priori* sense, furnish strong grounds for many of his therapeutic deductions. He regards the morbid condition constituting disease, whether dynamic, structural, or humoral, as the immediate result of the vital actions *ordinarily existing in the system;* he affirms that there is no *new* thing superadded to the living body, and constituting a special entity; that causes of disease, in short, as ordinarily understood, are not real or efficient causes at all; they merely constitute "the *occasions* on the *prompting* of which the natural or vital functions of the living body set about forming the diseases themselves." It will be thus seen that he regards

> "All morbid action as but a modification or perversion of some natural or normal action or function; and all the physical results constituting morbid structural alterations, are mere perversions or modifications of natural or normal textures; or, at most, analogous textures fabricated from the same materials by like processes."

Having proved, at least to his own satisfaction, that diseases are *natural,* though not normal conditions of the human body, and that they are formed and maintained by the same vital powers which regulate and constitute the ordinary conditions of health, he urges, as a legitimate deduction from his premises, the reasonableness and probability of the natural cure of diseases; for, he adds,

> "If nature, without any extraneous aid, either dynamical or material, can build up diseases, there would seem no substantial reason why she should not be equally able to effect their removal."

The author, however, we think, exhibits a want of candor, or seeks to give himself undue prominence, in his frequent allusion to the study of the *Natural History of Diseases.* Its importance he surely cannot over-estimate. It is the pedestal upon which the whole superstructure of a sound medical education must rest. But Sir John appears to lose sight of, or to ignore, the fact that the whole tendency of modern medical science is in that direction. There never was a time in the history of medicine when more attention was given to the associated study of Physiology and Pathology. The study of these branches is urged by our National Medical Association; they are taught in every respectable medical college in our land. Everywhere, both in the Old World and New, zealous workers are in this field, searching, by scalpel, by microscope, by weight, and test-tube, and analyses, into the mode by which the normal changes of the body are perverted in the infinite deviations or alterations which constitute disease; thereby attempting to arrive at just such a history as the author shadows forth.

But the autocracy of Nature, as the author expresses it, in the *cure* of these diseases, is quite another question. Upon this point, as yet, an honest difference of opinion may exist. It must be conceded, however, that the cures of all diseases are affected by nature; art is only her assistant, and cures by her means. In visible diseases, surgical so called, no body doubts that this is the case. Every surgeon admits that it is not he who cures a fracture, a wound, or an ulcer, but it is Nature; the vital power, which restores through her wonderful operations of expelling foreign matter, throwing out fresh bony material, binding up by means of her natural splints, and uniting soft parts through the mysterious organization of the "neucleated blastema" of the blood. The office of the surgeon here is merely to guide these operations properly and to remove obstacles. And the same principle holds good in internal diseases, the relations of which are hidden from our senses.

The practical question, then, which presents itself, is, What can Nature do unaided? Can we rely exclusively upon the natural powers to re-establish the lost balance of the system? Can Nature do it in the most effective and expeditious way if left to herself? Or can she be assisted by Art? We have already conceded the power of Nature, and we express our honest conviction when we further add, that in many diseases Nature will effect a cure better and more expeditiously if left to herself; in some she is manifestly aided by Art—Art, it may be, rendering the internal cure *possible;* in others Nature succeeds at once to the powerful influences of a morbid poison, which, if neutralized by a proper antidote, would enable the natural life-forces of the system again to assert their control. Thus, Art can sometimes take away the whole disease by removing the exciting cause, and thus dispense with the curative reaction of Nature for its removal. Then, again, Nature may not have sufficient power to perform the internal curative process. Here Art interferes by suitable tonics, stimulants, and strengthening remedies. Art can also remove obstacles which render the curative process of Nature difficult or impossible, or may support Nature by combatting particular forms of disease by appropriate remedies. Who can doubt, for instance, the power of quinine in arresting the paroxysms of the malignant intermittents of the Mississippi Valley, and thereby, in hundreds and thousands of instances, furnishing, so far as we know, the only hope of recovery? Or, who can question the beneficial effects of the salts of iron on the blood in chlorotic anæmia? We might multiply many such instances. Our opulent materia medica is full of them.

But, although a powerful advocate of the regiminal treatment of disease, Sir John Forbes by no means despises or rejects the use of drugs. Thus, in speaking of alteratives, he says, "the class contains some remedies of positive and evident power;" he lauds opium as "the noblest instrument of the medical art." Indeed, under the head of the "Instruments of the Medical Art," he scarcely passes in review a single class of remedies of which he does not speak more or less favorably; and we are at a loss to know how an honest, conscientious physician, who believes he can command a remedy of "obvious and admirable power," can refuse his patient its benefits for the purpose of testing whether the unaided powers of Nature are sufficient to remove disease. We once had an opportunity of studying "the natural history of disease" in a case of paroxysmal fever of the West. It was, in the onset, a simple uncomplicated case of *malarious fever.* We had seen such diseases treated by pepper and steam, by cold baths and warm, by emetics, cathartics, quinine, arsenic, strychnine, and "Indian chologogues;" but never before by infinitesimal doses of *sugar!* We made accurate note of it at the time, and published it for the benefit of those interested in the study of the *natural history of disease.* The patient—a valuable citizen—died. On his tombstone might have been appropriately written, "*Died for the want of thirty grains of quinine—a victim to the dreamy speculations of Homœopathy.*" We had, in this case, it is true, the rare opportunity of studying "the natural history of the disease," but unhappily our knowledge was imbittered with the thought that it was at the expense of valuable life.

The enlightenment of the profession has established too clearly the fallacy of relying exclusively on the morbid evolutions of Nature for the cure of disease. We find her practices too often baleful, and often she deals with us in a double sense. While she "soothes the grief of a wound" by pouring out serum, and knits it up by her adhesive inflammation, by the very same method she contracts the valves of the heart, effectually closes the glottis, or glues the intestines into fatal entanglements. She pours out the serum of the blood on her free surfaces, and we bless her for her recuperative powers in saving us from dropsy; while another poor victim dies because she deluged his heart with the same fluid. One glorifies her for saving him from apoplexy by an epistaxis or hemorrhoidal flux; while another dies because she poured the same fluid into his lateral ventricles. These errors of pathological Nature lead us to distrust a theory or system based exclusively on her natural reactions.

But it would be doing the author injustice to assert that such is his creed. He evidently has no leanings toward homœopathy. While he values the negative statistics, as evidence of Nature's unassisted powers, he pronounces the system itself "one of the greatest and most singular delusions that has ever been entertained by the professors of the healing art." And, in comparison with a true and rational practice, adds,—

> "Its results are greatly superior to those of Homœopathy, which, in its blind devotions to the most visionary hypothesis, ignores and overlooks the most positive and obvious means of aid presented by the resources of ordinary medicine."

The reader may desire to know how Sir John Forbes reconciles the apparent contradiction involved in his almost unlimited faith in the powers of Nature to cure disease on the one hand, and his laudation of the more valuable articles of our materia medica on the other. We quote his own words, premising that, in discussing the various modes of treatment that have been and are in vogue, he advocates what he calls RATIONAL EXPECTANCY.

> "This modification of the indirect physiological method of treating diseases (more especially acute diseases) I regard as at once the most philosophical, the safest, the surest, and the most successful of all the forms it assumes in practice. Although in appearance it differs little from the last form of treatment, except in degree, it is based on a somewhat different principle, and seeks to fulfil different indications. In the first place, it completely recognizes the autocracy of nature in the cure of acute diseases; and proceeds on the principle that it is not only useless, but injurious, to attempt to suppress, or greatly to modify the morbid processes by strong measures of a perturbative or exhaustive kind.
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> "The indications which this mode of treatment seeks to fulfil are chiefly the following:—1st. To place the diseased body in the most favorable circumstances for the development and exercise of its own conservative powers, by the institution of a proper regimen, in the most comprehensive sense of that term. 2d. To endeavor thereby, or through the use of medicaments, to remove such obstacles to the favorable action of the conservative and restorative powers, as may be removable without the risk of checking or injuriously perverting them. 3d. Applying these measures under a watchful supervision; not to attempt, by any vigorous measures, to alter the course of the morbid processes so long as they seem to keep within the limit of safety; and when they transgress this limit, only then to endeavor to modify them by such mild measures as, if they fail of doing good, cannot do much harm. 4th. To be on the watch against possible contingencies, which may demand the employment of measures of exceptional activity, whether in the form of regimen or medicine, and, when required, to apply such measures with the necessary vigor."

We most heartily concur in Sir John Forbes's method, so far as he combats the purely empirical, as contra-distinguished from the physiological mode of treating disease, and we doubt not he is doing a good work in waging war against the reckless in the indiscriminate use of drugs. In a practical point of view, two errors are apt to exist, or rather two extremes, both of which the intelligent and conscientious physician should carefully avoid. The first is doing too little—the negative treatment which leaves all to nature; the second is that of doing too much. In the effort to *cut short*, as it is called, or extinguish disease by a "bold stroke," the organism too frequently suffers more from the administration of the remedies than from the disease. This indication is, however, happily less acted on now than formerly; and if Sir John has had much intercourse with physicians of less than twenty years standing, and is familiar with their practice, he must have observed the growing tendency to scepticism in the heroic dosing of the olden time. It is an unfortunate constitution of the human mind that it inclines to go from one extreme to another in an opposite direction. In avoiding the Scylla of ancient dogmatism, we may plunge into the Charybdis of a false modern scepticism—a scepticism which, having no positive basis for its opinions, is blown about by every wind of public opinion. Such men are the clogs to the profession, and become, sooner or later, victims of their own incredulity. "I know of no more revolting position," says Renouard, "for a conscientious man, nor a more ridiculous one, than that of a physician who has no confidence in the means he employs. Such a man cannot possibly pursue the study and the practice of his art with the zeal, application, and assiduity which alone can secure him real honest success."

But there is another and a philosophical scepticism of a widely different kind—a scepticism which doubts but to confirm and prove, which waits upon, and follows the lead only of well-established fact, and which co-exists with an ardent love for the profession, and hope for its future. Such a scepticism has ever characterized the most enthusiastic and successful cultivators of science; and, with all his doubts, it will be seen by the following extract, that Sir John Forbes has no mean opinion of our art:—

> "According to the lowest estimate that can be justly formed of the medical art, it must still hold its pre-eminence as one of the greatest boons that human intellect has ever elaborated for the benefit of man's estate. With all its feebleness and all its uncertainties, it possesses, and ever must possess, a sufficiency of solid truth and solid power to make it worthy of the study and pursuit of the noblest intellects and tenderest hearts."

We have thus attempted to give, if not a detailed summary, at least the spirit of Sir John Forbes's book, and most heartily and sincerely do we commend it to the profession of America. It is a valuable "legacy" to all who are honestly seeking for truth in their profession; and, although extreme in some of his views, he has evidently written in an earnest hatred of quackery in all its forms, and in an honest desire to promote the highest interest of our common profession. And such, we think, must be its tendency. We have read and re-read it, we hope, with profit; and while our faith in the powers of Nature to cure diseases has been strengthened, we no less continue to believe that "*the Lord hath created medicines out of the earth, and he that is* WISE *will not abhor them.*"

ART. III.—*The Institutes of Medicine.* By MARTYN PAINE, A.M., M.D., LL.D., Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc., etc.; 8vo., pp. 1095. Harper & Brothers: New York, 1858.

No one can read the volume whose title is recorded above without being filled with respect, and even admiration, for the profound erudition, the pains-taking and systematic research, and the laborious reflection exhibited so abundantly in its pages. With careful and discriminating hands, Dr. Paine has gathered together, from the writings of both the earlier and cotemporary physiologists, the numerous important facts and details which constitute the subject-matter, the crude material, so to speak, of his favorite science, and arranged and built them up into a stately edifice—the Institutiones Medicinæ—whose great corner-stones are Physiology, Pathology, and Therapeutics. Years ago the accomplishment of such a task would have required comparatively but little time and labor. At present, however, when the granaries of physiological science are fairly groaning with the golden grains of observation and experiment, gathered in by those industrious reapers and gleaners,—the experimental physiologist, the vivisector, the organic chemist and physicist, —the task has become an herculean one, demanding an extent of uninterrupted leisure, an amount of reading, and a degree of patient, persevering labor and mental application, to which few men in the medical profession can lay claim. Moreover, habits of close observation and an unusual degree of the generalizing power are qualifications essentially necessary to the undertaking. But, unfortunately, the rarity of these qualifications is equalled only by their importance. It is not to be wondered at, therefore, that the various attempts to establish a truthful, thoroughly philosophical, and satisfactory system of medical Institutes, should have proved abortive. A cursory examination of the history of physiology will suffice to show that these failures have naturally resulted from the narrow and restricted method employed in studying the operations of Nature. From time to time, as the different branches of science, under the guidance of some bold and masterly inquirer, made rapid advances in the acquisition of positive and reliable facts, Physiology received a peculiar bias in its direction. To this cause may be traced the iatro-mathematical, iatro-chemical, and other schools, each of which had its able and enthusiastic supporters, and in each of which the same fundamental error was committed—that of hasty generalization based upon isolated groups of phenomena, and the application of vague and limited laws to the explanation of the functions of the entire economy. In course of time, the array of observations and facts presented by these schools became so confused and conflicting, and appeared so incapable of elucidating function, that many physiologists, abandoning them entirely, went to the extreme of ignoring physical and chemical action altogether, and making the physics of the body wholly subservient to a mysterious force, power, or quality, which was unlike anything else in Nature, and which ruled the whole organism, seated king-like upon some special organ whence it issued its imperative mandates. Such was the vitalistic school in which the *anima* was everything; mechanics, physics, and chemistry nothing. "We are told," says Dr. Bostock, in his *History of Medicine*, "that the *anima* superintends and directs every part of the animal economy from its formation; that it prevents or repairs injuries, counteracts the effects of morbid causes, or tends to remove them when actually present, yet that we are unconscious of its existence; and that while it manifests every attribute of reason and design, it is devoid of these qualities, and is, in fact, a necessary and unintelligent agent." The majority of the physiologists of our own immediate day belong to what may be called the physico-chemico-vital school. They occupy a middle ground, between the pure vitalists and physicists of former times, assigning, with true eclecticism, some of the phenomena of life to a peculiar vital agent, and others to the action of physical forces belonging to organic in common with inorganic matter.

To this eclectic school, and to all the advocates of the chemical and physical theories of life and its manifestations, Dr. Paine is a most determined and vigorous opponent. In his Preliminary Remarks, after defining the scope of his work, explaining the legitimate objects and relations of physiology, pathology, and therapeutics, and animadverting upon the doctrines of the chemical, vital, and chemico-vital schools, he boldly throws down the gauntlet in favor of vitalism, declares himself a confirmed and thorough vitalist, discountenances, *in toto*, the labors of the modern organic chemists, and finally assails, with controversial warmth, Liebig, the great leader of the chemical school, Carpenter, Prichard, Roget, Fletcher, and others who differ from him as to the nature, properties, and relations of the vital principle. Hear him speak in his own emphatic language:—

> "Chemical and mechanical philosophy, as we have already seen, are strangers to the philosophy of medicine. There is a natural conflict between the subjects of each. They have no relationship, no sympathies, but carry on a perpetual hostility. The organic being is forever converting to its own uses the inorganic, and changing its very nature into its own. The inorganic is fruitless in resist-

ance and in assault, till the former is passive. It then lays waste the fabric by which it had been wrought into a great system of designs, and degrades the whole to its own level. Chemistry, therefore, begins where physiology ends; and physiology begins with organic influences upon the elements of matter, or where chemistry leaves off. No department of medicine has anything to hope from chemistry beyond its power of analysis.

"And yet do the labors of chemists aspire at a substitution of the ever-fluctuating principles of chemical science for all that has been hitherto founded upon the phenomena of life and disease. Their oft repeated effort to carry a science which is mainly analytical and mechanical into that which is eminently intellectual and overflowing with the most sublime institutions, and distinguished by the most profound principles and laws of Nature, and therefore seductive to an ambition which is restif under the practical manipulations of the laboratory, would raise no inquiry as to motive, or end, did not the proper guardians of the science not only abandon their old and rich domain at the very approach of the enemy, but, with most unnatural distrust of self, invite the destroyer.

"The late publication of Liebig's 'Animal Chemistry' has abundantly proved the truth of what I sufficiently established in the 'Medical and Physiological Commentaries'—that the recent application of chemistry to physiology and medicine is not a partial, but a complete substitution of that science. In justification of all this, we are now told that the means of investigation, of analysis, and of creation, have received an extension of which our predecessors had no knowledge. Such, however, has always been the pretext of chemistry for its invasions upon the science of life. Take, for example, the words of Fourcroy, who wrote more than sixty years ago, and who, like Liebig and his school, attempted to substitute chemistry for physiology, and to rear up a fabric of medicine upon that imaginary foundation; and this, too, in the case of either of the masters, without having ever read a medical book, or having ever prescribed for a disease. The language of Fourcroy is exactly such as we now hear from the lips of Liebig and his followers; who cheerfully allow that nothing flowed from the labors of Fourcroy to illuminate the dark ways of organic life. * * * * * * *

"I have said, in the Commentaries, that 'a prosperous harvest' was promised from Fourcroy's reformation. But again I reiterate, where is the evidence? since which time, also, chemistry has made greater advances than any other science, has had its unmolested sway, and Fourcroy's example has been followed with a corresponding diligence. Can you point to a solitary instance in which organic chemistry, except in a negative sense, has advanced the science of life or disease? Do not the very chemists of this day incidentally allow the perfectly abortive nature of their science in relation to physiology and medicine? Consult the quotations in section 350, etc. Or take the affirmations of the distinguished Mülder, which go, with the rest, to establish the truth of my former assertion, that '*chemistry has been a perfect incubus upon medicine; and the time is not distant when it will have proved, by its own showing, its want of relation to our subject, if it have not done so already.* * * * * * * * * * * *

"The reader should never lose sight of the foregoing hypothesis and admissions (of Liebig.) They should be ever ready to chasten his credulity as to the chemical interpretation of every organic compound. They stamp the whole 'science of organic chemistry,' in its synthetical aspects, as one of pretensions, and unworthy the confidence of an intelligent mind."

Nearly one-half of the volume before us is devoted to the consideration of physiology proper, under the various heads of the composition and structure of the human organism, the vital principle, irritability, sensibility, mobility, vital affinity, vivification, nervous power, mind, instinct, the functions, etc., together with general remarks upon the philosophy of life and death, vital habit, age, temperament, the races of men, the relations of organic beings to external objects, unity of design in physiology, etc., etc.

The details concerning the differences between organic and inorganic bodies, and the structure and composition of organic beings, a knowledge of which is necessary to a thorough comprehension of the great and important laws which guide and control the actions of man in health and disease, are all clearly and concisely set forth in a series of propositions naturally and logically successive, and almost aphorismic in their character. Nevertheless, their perspicuity is impaired, and their relation to and dependence upon each other obscured, by the polemical digressions in which the author so frequently indulges. These digressions, it is true, exhibit, to a considerable extent, the logical and argumentative powers of Dr. Paine, and show how well he has mastered the literature of his subject; but, while they render his writings racy and attractive to the advanced student who has already acquired a certain familiarity with the subject, they are, nevertheless, obnoxious to the objection that the tyro in physiology, for whose instruction the book is also intended, is led too far from his direct path, and lost in the thicket of controversy. In his really valuable remarks upon the composition of organic beings, he appears as a judge in open court, and summons before him various eminent witnesses, such as Liebig, Tiedemann, Müller, Hunter, Roget, Carpenter, Prichard, Prout, Bichat, Paget, Montgomery, and others, and cross-questions them so minutely and searchingly, that the student, dipping for the first time into this work, is like the novice in court, utterly mystified by the examination and the replies elicited. He even quarrels with the geologists about the amount of light which our globe enjoyed in the earlier periods of its existence, and hurls at them the grave charges of materialism and infidelity. This we regret to see; for although, with the thinking few, such charges, unless well sustained, fall unheeded to the ground, yet, with the thoughtless masses, who are ever as the times are, they are simply dangerous and prejudicial. In fact, whenever, in a work which professes to be purely scientific, we find such charges preferred by the author against his opponents, we are always strongly inclined to think that there is some fallacy or weak point in his argument, of which he is aware, and which he desires to conceal; and we make bold to say, that upon close examination, we have not unfrequently found such suspicion to be amply confirmed.

Our author's observations upon structure, especially in its diseased relations, will amply repay an attentive perusal. He takes strong, and we think, in the main, just ground, against the utility of the microscope in physiological research. We have long been of the opinion, and this opinion we have already freely expressed in another place, that physiology cannot expect much elucidation from minute anatomy. Nevertheless, we are by no means prepared to give our full assent to the following language, which we find on pp. 59, 60 :—

> "It has already been stated, that a knowledge of the minuteness of structure which is supplied by the microscope is practically useless, while the deceptions of that instrument have led to many important errors in physiology and pathology. It cannot be depended upon, especially in exploring soft structures. If it lead to unimportant facts, it is equally liable to betray us into error and fallacious hypotheses. The whole history of that instrument, so far as physiology is concerned, has gone to confirm the foregoing conclusions, which were originally advanced in another work, and has conclusively sustained the opinion of one of the most profound observers of the present age.
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> "Microscopical information, so far as correct, goes to the amount of human knowledge, and to the perfection of science, though it may not contribute to useful ends. But experience shows us that we may not depend, as it respects the microscope, upon the vision of others, especially where a high magnifying power is required. Each must observe for himself; and, as allowed by Ehrenberg, long practice alone can assure him of any general accuracy. The laborious student may attend to this accomplishment. But, *vita brevis, ars longa;* and he will be likely to live the subject of deluded sense rather than of enlightened understanding.
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> "When we consider, therefore, the constant deceptions of the microscope, especially in all explorations of soft substances, and the absolute uselessness of any knowledge it may convey as to the recesses of organization, it may be reasonably expected that the time is not distant when all this lumber will be excluded from practical works on physiology, and turned, at least, into a channel by itself."

The third division of the physiological part of the work is occupied with the consideration of the "Properties or Powers of Life." Here it is that the positive—we are free to say too positive—vitalistic tendencies of Dr. Paine exhibit themselves in all their force.

> "A vital, or peculiar governing principle or power, in organic beings, has been recognized by all the most distinguished medical philosophers at all ages of the science. It is the fundamental cause of growth, nutrition, and of all other phenomena of organic beings. It is, in all but the vulgar acceptation, synonymous

with the term *life;* and *life*, therefore, is a *cause*, and not an *effect*, as has been assumed by many distinguished physiologists."

And, again, after discussing the views of the ancients and of the leading physiologists of the present day, concerning the vital principle, he proceeds:—

"*There is not, indeed, in the whole range of medical literature, one author, however devoted to the physical and chemical views of life, who does not evince the necessity of admitting a governing vital principle as a distinct entity, distinct from all other things in nature. I say, there cannot be produced one author of any consideration, who does not summon to the aid of his discussion a vital principle whenever he touches upon the abstract phenomena of life.* And this I have abundantly shown by an extensive range of quotations in my various publications."

Now, fifteen years ago, or four years before the first edition of Dr. Paine's *Institutes* was issued, there appeared in London, from the press of William Pickering, a learned work in two volumes. This work was not so much one of original research as of original reflection and extraordinary generalization; though it did not add one new fact to the sum of human knowledge, yet it embodied the results of the most laborious and protracted thought applied to the examination of all the leading and well-established facts of physical, chemical, and physiological science, with the view to harmonize such facts, to show their true relations, and to deduce from these relations a great system of natural philosophy, physiology, pathology, and therapeutics—a comprehensive, philosophical theory, in short, of the universe.

This work was spoken of by the editor of the *London Medical Gazette*, as one which "bears the unquestionable stamp of genius, and carries with it, at the same time, evidences of learning, various and extensive, and of such laborious research as can be successfully achieved only by minds of the noblest order in pursuit of sacred truth. And truly, we make bold to say, that we have never met with an effort so sustained, and we add with confidence, so successfully made, to raise the veil from the shrouded statue of Isis."* In another place, he assures us that it is a work "whose like comes from the press only at rare and distant intervals—a work, indeed, of sublime scope, and, rightly taken, of the noblest tendency. It is the truest specimen, and most successful achievement of that which the late Earl of Bridgewater had in view, when he left a sum of money for the purchase and publication of a series of treatises illustrative of the wisdom and goodness of God in creation. But it has the great advantage over any treatise which could be obtained under such circumstances, that it is not 'written to order.' It is the spontaneous effusion of the gifted mind, brimful of knowledge, and tinctured with the hallowed fire of poetry."* And again, in a foot-note at the close of his translation of *Wagner's Physiology*, Dr. Willis particularly refers to this remarkable work. The translator of Dumas and Boussingault's *Organic Chemistry* bore testimony to the originality, profundity, and comprehensiveness of its views in every branch of physical and medical science. The *British and Foreign Medical Review*, though entirely opposed, as we shall presently see, to the doctrines of the author, was forced to conclude that the "impartial and intelligent reader can feel no doubt that the foundation of his system embodies a vast extent of valuable and undoubted truths." The journals of our own country, also, lauded the book, as we might readily show by extracts therefrom, did our limited space permit. The late Dr. Caldwell, the friend and former preceptor of the author, eulogized the work most enthusiastically, while Dr. Condie, in the *American Journal of Medical Sciences*, for January, 1846, spoke of it as "evidently the production of an original mind, well versed in the natural sciences, and habituated to close and laborious investigation." (p. 133.)

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* March 17, 1844, p. 229.

Now this London book, in two volumes, which at first threatened to fall still-born from the press, and which saw the light after years of patient toil, after years of privation, suffering, and penury, cheerfully endured by its American author, that he might avail himself of the facilities for study and investigation afforded by the libraries of the British metropolis, was, after all, but the elaboration of a smaller work; an essay,† in fact, of 158 pages, read by the same author before the New York Lyceum of Natural History in 1833, and dedicated to Joseph Delafield, then president of the Lyceum. Subsequently, the views contained in this publication were somewhat extended in several spirited articles upon life, contributed by our author, while residing in New York, to the *Knickerbocker Magazine*, (1834–35.) Since the publication of "Caloric," though he wrote and studied much, we believe he published nothing more.

Need we say that the writer to whom we allude is the late Dr. S. L. Metcalfe, formerly of Kentucky, and for some years prior to his death a resident of this city, (Philadelphia.) For several years he was our neighbor and friend, with whom we were at all times happy to commune upon matters touching the science of life, and it became our painful duty at last to announce to the world, through the medium of the public papers, the news of his death, transmitted to us by telegraph, on the 17th of July,

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* June 21, 1844.

† The reader will find a lengthy synopsis of this essay in Hinton's History and Topography of the United States. Boston, 1834. Vol. ii. p. 477.

1856, about a week after he had left the city, in the vain hope of being invigorated and restored to health by the sea-breezes of Cape Island.

This notice of Dr. Metcalfe and his writings has been introduced here as affording at once the best and most singular refutation of the statements embodied in the italicised sentences contained in the paragraphs above quoted from Dr. Paine. With the exception of the words "vital principle," the italics are our own. Indeed, it is rather remarkable that we cannot find in the *Institutes* any reference to the writings and the peculiar views of our departed friend. And yet these writings bear internal evidence that their author had been ploughing in the same great field as Dr. Paine, and, singularly enough, in the same city, and at about the same time.* These writings, moreover, employ, in a most logical manner, not a few of the same facts as those used in the *Institutes*, and many others of a wider scope, to substantiate the great fundamental principle for which their author contended most determinedly to the day of his death ; the existence of a *substantive vital principle* NOT distinct from all other things in nature, but, on the contrary, identical with the *essentia caloris* ; the *ουσία αίθέρος*, or subtle fiery ether, which Pythagoras regarded as the "principle of life, animating the whole system of nature;" which Heraclitus held to be the "primordial principle of the generation of all things;" which Plato taught "to be the immediate natural agent, or animal spirit, to cherish, to warm, to enlighten, to vegetate, to produce digestion, circulation, secretion, and organic motion in all living bodies, animal and vegetable;" which Hippocrates speaks of as the "cause of motion, change, growth, diminution, etc.," and to which Newton was inclined to ascribe far more efficiency as a primal and powerful causative agent than his biographers and critics appear to be willing to admit.

In the appendix which closes his *Institutes*, Dr. Paine devotes a few pages to the discussion of the rights of authors. "Upon all questions of priority that concern the advancement of science and art," says he, "there is, doubtless; a general understanding that the principle should not only be sacredly observed, but that, whenever violated, there should be a common effort to repair the injury. This is alike due to the individual, to the principle, and to the common good." Our hearty concurrence with this opinion impels us, in connection with the above remarks, to raise here a question as to the claim of originality put forth a few years ago by Professors Grove and Carpenter, in reference to the doctrine of the correlation of the physical and vital forces.

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* The New York Journal of Medicine for Sept. 1845, contains a review of Metcalfe's work, in which, on p. 205, distinct reference is made to the different views entertained by Drs. Metcalfe and Paine, concerning the nature of the vital principle.

Dr. Metcalfe's essay, entitled a "New Theory of Terrestrial Magnetism," and published in 1833, contains the following paragraphs, which show how far his active mind had anticipated both Grove and Carpenter in their speculations concerning the convertibility of the physical forces into each other, and the correlation of these with the vital forces.

"It will be our first object in this essay, to trace some of the most striking analogies of caloric and electricity; to show that they are radically the same subtle, imponderable, and all-pervading element; and that its unequal distribution throughout nature, is the cause of all the various powers and attractions of ponderable matter with which we are acquainted. (p. 7.) * * * * It (caloric) is the source of life and motion throughout creation. (p. 8.) * * * * We are not authorized to predict a primary distinction (between caloric and electricity) until fully acquainted with all the different states and affections of caloric under different circumstances; for example, in its combinations with different substances, in a solid, fluid, gaseous, or imponderable state—as with the matter of light—its diffusion, concentration, compression, &c. (p. 15.) * * * * There is not a greater apparent difference between any of the forms of caloric and electricity, than between the electricity in the atmosphere and in an exhausted receiver. (pp. 15, 16.) * * * * Before caloric combines with, and expands water into atmospheric vapor, it is universally acknowledged to be sensible heat; after it enters into the water and converts it into transparent invisible vapor, its state is changed; and, when greatly accumulated in this state, it exhibits electrical phenomena. To say, however, that its elementary nature is changed, would be as unphilosophical as to contend that the latent caloric of water is specifically different in its nature from the same caloric when set at liberty by pouring water on calcined lime; or that it is distinct from the caloric which moves a steam-engine by its expansion; or that the galvanic fluid is distinct from the electricity of a Leyden jar, because it moves with less velocity. (p. 16.) * * * * Had philosophers attended more carefully to the great changes which take place in the states of caloric, produced by its various *modes* of combination with other matter in different forms, they would probably have been led to discover more clearly, if not the identity of caloric and electricity, *at least that they are inseparable*, and *that without caloric there could be no electricity.* (p, 17.) * * * * One of the most decisive proofs that caloric and electricity are convertible into each other is, that during all condensation of ærial vapor, whether into rain or snow, during winter or summer, caloric is given out in very large quantities. (p. 19.) * * * * Caloric, electricity, and galvanism have hitherto constituted a separate and distinct triad of imponderables, perfectly incomprehensible; all the phenomena of which are quite intelligible, if we refer them to the agency of one grand, primary, universal element. (p. 27.) * * * * That there is a subtle, vivifying principle disseminated throughout nature, and which is intimately connected with caloric, would appear from the effect of cold on the various tribes of animal and vegetable existence. (p. 46.) * * * * One thing is certain, that innumerable forms of life spring from, or at least accompany the presence of caloric; while its absence is always attended by the entire extinction of life. Hence it would appear unphilosophical to call in the aid of some other

> unknown imponderable aura as a vital principle, when the agency of caloric, united (though we know not precisely in what manner) to the various forms and combinations of matter, explains the phenomena quite as well. (p. 48.) * * * * The states and affections of caloric are infinitely diversified by the various modes of its combination with ponderable matter. (p. 49.) * * * * Does not caloric answer to the subtle ether of Sir Isaac Newton? Does it not extend from the centre to the circumference of the universe? Is it not the cause of all the motions and transmutations of terrestrial matter? of decomposition and recombination? of secretion, nutrition, growth, &c.? Is it not the semperviving energy of universal nature?" (p. 52.)

These passages we have selected at random, from the first part of Dr. Metcalfe's essay, not for the purpose of claiming for him the merit of originality in the enunciation of the correlation doctrine, as applied to the physical forces; for this, as will be presently seen, we cannot accord to him; but to show that in 1833 he was not only perfectly familiar with the great doctrine in question, but contended forcibly for it in the essay above-mentioned, in which the reader will find, if he take the trouble to refer to it, not a few of the arguments employed by Grove, thirteen years afterwards, to substantiate the same great generalization. Whether Dr. Metcalfe arrived at these views independently of the writings of others, and simply by reasoning upon the well-known facts of science, we have never been able to determine; but that he was not the first to announce the correlation doctrine, we are very certain; for we have in our possession a thin octavo volume of ninety-one pages, published in Philadelphia in 1827, by Lardner Vanuxem, a Philadelphian, and entitled "An Essay on the Ultimate Principles of Chemistry, Natural Philosophy, and Physiology." On page twenty-eight of this work, we find the following clear and unmistakable proposition, the last of five conclusions which the author states to be "in conformity with the facts presented by chemistry and natural philosophy," and which he supports with abundant argument, and in a masterly manner.

> "There exists but one kind of repulsive matter, as will be shown, exhibiting four different states convertible into each other, not only accordingly as it is acted upon by particles, or groups of particles forming masses, but according to the kind of particles and masses. These states of repulsive matter are caloric, light, electricity, and magnetism."

And again, on page thirty, he says:

> "As all our experiments prove that caloric, electricity, magnetism, and light are convertible one into another, according to the relationships or quantities of repellant and attractive matter, it seems to me that their existence as four distinct fluids, or kinds of ethereal matter, is inadmissible; for this conversion, or change of characters, is analogous to what are called the properties of bodies, and not to the bodies themselves."

In 1837, four years after the publication of Metcalfe's essay, Dr. Samuel Jackson, the learned Professor of the Institutes of Medicine in the University of Pennsylvania, delivered and published an able Introductory Lecture, from which we quote the following paragraph :—

> "Physical phenomena, according to the class they belong to, are referred to a few simple laws, as gravity, caloric, affinity, galvanism, electricity, magnetism; all of which, it can now be scarcely doubted, are modifications of one great force. The force producing physiological or organic phenomena may be no more than a modification of the same ruling power displaying its activity in organized matter."

In his Bakerian Lecture for 1845, the celebrated Professor Faraday wrote as follows :—

> "I have long held an opinion almost amounting to conviction, in common, I believe, with many other lovers of natural knowledge, that the various forms under which the forces of matter are made manifest have one common origin; or in other words, are so directly related and mutually dependent, that they are convertible, as it were, one into another, and possess equivalents of power in their action. In modern times the proofs of their convertibility have been accumulated to a very considerable extent, and a commencement made of the determination of their equivalent forces."

Upon pages seven and eight of the first edition (1846) of his treatise on the "Correlation of the Physical Forces," Professor Grove thus speaks:

> "The position which I seek to establish in this essay is, that the various imponderable agencies, or the affections of matter which constitute the main objects of experimental physics, viz., heat, light, electricity, magnetism, chemical affinity, and motion, are all correlative, or have a reciprocal dependence. That neither, taken abstractedly, can be said to be the essential or proximate cause of the others, but that either may, as a force, produce or be convertible into the other; thus heat may mediately or immediately produce electricity, electricity may produce heat, and so of the rest."

Here is, indeed, a remarkable coincidence, not only in ideas, but also in the language in which these ideas are clothed. The acute reader will also discover certain curious and remarkable differences and inconsistencies. These we intend to consider in detail in a future and more extended article.

In 1843, after ten years of constant application to it, Dr. Metcalfe published, in London, his larger work, entitled "Caloric, its Mechanical, Chemical, and Vital Agencies in the Phenomena of Nature." Here we find him piling fact upon fact with wonderful precision and skill, to prove that caloric, intimately combined with, and acting through organic matter as a peculiar medium, is the cause of all the complex phenomena of life; is, in fact, converted into the vital principle. Our space permits the introduction of the following quotations only :—

"The prevalent doctrine of modern physiologists, that the phenomena of life are wholly distinct from those of inorganic matter, has arisen from our imperfect knowledge in regard to the primary physical cause of motion throughout nature; and is refuted by the fact that the organizing power of the earth, like all the mechanical and chemical transformations that modify its surface, is directly in proportion to the quantity of caloric which it receives from the sun. (p. 507.) * * * * * That the power of living bodies to renew their composition by assimilation, and to reproduce their species by generation, is governed by the emphatic agency of caloric, is evident from the fact that the power of nature to multiply organic forms is directly in proportion to the temperature of the earth from the equator to the polar circles. (p. 530.) Having shown this, I proceed to prove that the organizing power of animals, and the activity of their respective functions, are directly in proportion to the quantity of the same active principle derived from the atmosphere by respiration." (p. 561.)

If the reader who may have followed us attentively will refer to page one hundred and sixty-seven of the second edition of Dr. Carpenter's "Principles of General and Comparative Physiology," published in 1841, and to page fifty-six of the first edition of his "Principles of Human Physiology," published in 1842, he will there find that Dr. C. at that time taught that "all the actions manifested by living beings are dependent upon two sets of conditions—an organized structure, possessed of certain properties which are termed *vital*, as being distinct from the physical properties of inorganic matter, and certain agents, whose presence is necessary to call these properties into operation, and thus to produce the manifestations of life. That a seed which remains unchanged during a period of many centuries, and at last vegetates, when placed in favorable circumstances, as if it had been ripened but the year before, is not *alive*, but is possessed of the property of *vitality*, or the power of performing vital actions, when aroused to them by the necessary stimuli—such as warmth, moisture, oxygen, etc. Its condition resembles that of the human being in profound sleep; he is not then a feeling, thinking man, but he is capable of feeling and thinking when he is aroused from his slumber, and his mind is put into activity by the impression of external objects."

The attention of our readers is next directed to the eighteenth article of the *British and Foreign Medical Review* for October, 1844. This article is a review of Dr. Metcalfe's work on caloric, and has been attributed, by report, to the pen of Dr. Carpenter. Indeed, we have been informed by a friend of ours, residing in London at the time to which we are now alluding, that this review was written in Bristol, by the author of several physiological works. The works of Dr. Carpenter above referred to are dated from Bristol, where he then resided. Although we cannot vouch for the truth of this report, nor the accuracy of the information, we are free to say that the style and language of the review, and the physiological ideas inculcated therein, closely resemble those of Dr. C., as will be seen from the following paragraph, which we find on page five hundred and nineteen, and which the reader is requested to compare with the passages above quoted:—

> "Our readers are doubtless familiar with our views on this subject, which we may here briefly recapitulate. We hold it absurd to deny that both physical and chemical powers are at work in the living organism, and have a large share in the production of its actions; but it appears to us equally certain that there is another set of powers also concerned—those to which we give the name of *vital.* These last are exhibited only by organized tissues, possessing a certain chemical composition, and a peculiar arrangement of their structure, which no artificial means can produce; and *in all instances* the generation of a fabric capable of exhibiting vital phenomena is dependent upon the action of a previously existing organism. Now the manifestations of these phenomena depend upon certain conditions, the failure of one of which is a total preventive of them. Thus, a seed requires for its germination not only heat, but moisture and oxygen; and if the seed have lost its vitality, no amount of these other agents can excite the action in question. It appears, then, that the vital property of the seed, acting under the conditions in question, is the source of the act of germination; or perhaps it might be urged that they are all concurrent causes, equally concerned in producing the effect, because it could not take place in the absence of any one of them. But we cannot single out any one of the physical agents just alluded to as more important than the rest, since germination can no more take place without oxygen or moisture than it can without heat. Hence we deem it very unphilosophical to assert, as Dr. Metcalfe does, that caloric is *the* efficient cause of the vital actions of living beings, since it is only one of several causes which must concur to produce the results in question. And while different actions may be performed under extremely wide varieties of condition, in regard to caloric, oxygen, etc., they all agree in being immediately dependent upon those peculiar properties which an *organized* being can alone furnish."

The writer of this review calls Dr. Metcalfe an enthusiast and system-maker, accuses him of hasty generalization, and opposes *in toto* all his scientific views. On page five hundred and eighteen he expressly discountenances the attempts of Dr. M. to prove the identity of caloric and electricity, or rather that they are modifications of the same universal element; and declares that, although their analogies are strong, their differences are "still stronger, requiring that, for the present at least, their phenomena should be referred to a distinct category."

Six years after the appearance of this review, (June 20, 1850,) Dr. Carpenter read before the Royal Society a paper "On the Mutual Relations of the Vital and Physical Forces," which was published in the Philosophical Transactions of that Society. Though bearing date of 1850, the fundamental views therein promulgated were really announced by Dr. Carpenter more than two years earlier, in a review of Pareira's edition of

Matteucci's "Lectures," contributed to the *British and Foreign Medico-Chirurgical Review*, for January, 1848, p. 235. Earlier than this we have not been able to detect in the writings of Dr. C. any positive evidence of his acceptance and support of these views. On the third page of his paper just referred to, (p. 729 of the Society's volume,) he speaks of the doctrines set forth in the passages quoted above from his excellent works upon Human and Comparative Physiology, and from the review of Metcalfe's book, as the "current idea" among physiologists, and as the "doctrine of those (including himself, of course,) who have most clearly expressed themselves upon the relation of the 'vital stimuli' to the 'vital properties' of organized bodies." He declares, furthermore, that he "has not been able to find, in physiological writings, any indication of a more intimate relationship between the physical forces and vital phenomena than that just stated, save on the part of those who have vaguely identified heat or electricity with the 'vital principle,' with about the same amount of philosophical discrimination as that which was exercised by the iatro-chemists and iatro-mathematicians of the sixteenth and seventeenth centuries." We may here remark, intercurrently, that this sweeping assertion, embodying as it does a positive claim to originality, based, to a certain extent, upon a negation of the claims and labors of antecedent writers, has induced us to make this exposition, just as the singularly positive and erroneous assertion of Dr. Paine, mentioned above, led us in the first place, to refer to the writings of Dr. Metcalfe. The reviewer of Dr. M.'s work, in the early part of his article, (p. 511,) says that as "much as he respects his author's industry and zeal, and as much as he desires to serve him to the best of his ability, he respects the sacred interests of truth much more," etc. We also respect these interests, hence our present inquiry. In his valuable paper, Dr. C. proceeds to assure us that the conviction of the very intimate relationship of the physical forces has been gradually increasing in strength in the minds of philosophical inquirers during the whole of the present century, and that he regards these forces "as so many *modi operandi* of one and the same agency." The reviewer just referred to is certainly not one of these "philosophical inquirers," for, as we have just seen, he assigns the phenomena of caloric and electricity to entirely different categories. Dr. Carpenter ascribes to Grove the merit of first formularizing the "entire series of the mutual relations of these forces," and endeavors to show "that *the same relation* exists among the several vital forces, whose operation may be traced in living bodies, as exists among the physical, and that the vital and physical forces are themselves connected by a similar relationship." Finally, he urges the necessity for a certain material substratum, as the medium through which this relationship is manifested.

But the reader will find in the Essays of both Vanuxem and Metcalfe, that the importance of the medium, through which the forces act, is distinctly dwelt upon. Dr. Carpenter, in the third section of his paper, (p. 747,) tells us that the "organizing forces are so completely dependent upon the continual agency of *heat*, that they may be considered as the manifestations of the action of heat upon organized fabrics." The author of the review so frequently referred to, in the *Brit. and For. Med. Rev.* for Oct. 1844, on the other hand, writes as follows:—"That the energy and rapidity of vital action depend in great degree upon the temperature at which it takes place, is a fact which is familiar to all physiologists; and in the large amount of facts which Dr. Metcalfe has collected in support of this position, we recognize little or nothing that was not previously well known.* That caloric is the immediate and operating source of these actions, however, seems to us to be a mere hypothesis, by no means justified by the premises. We see constant indications in Dr. Metcalfe's book of his tendency to grasp at facts which support his peculiar views, and to leave all others out of consideration," etc. Now, if our readers will peruse attentively the Essay of Dr. Carpenter on the Vital and Physical Forces, and compare it as carefully as we have with the earlier and later writings of Dr. Metcalfe, especially the second volume of his "Caloric," he will soon discover that, while Dr. C. and the *British and Foreign Medical Review* were industriously teaching that "vital force exists in a dormant condition in all matter capable of becoming organized," and only requires the action of certain external stimuli, such as light, heat, moisture, etc., to arouse it to activity, Dr. Metcalfe was boldly proclaiming to the world not only the close relationship of the physical forces and their dependence upon each other, but their absolute identity as modifications of one all-pervading force; not only the relationship of these to the vital forces, but also the identity of the *essentia caloris* with the *calor vitalis*, the vital principle. He will find that Dr. M. supported this proclamation, not with as little "philosophical discrimination as the iatro-chemists and iatro-mathematicians of the sixteenth and seventeenth centuries," but with all the important and well-known facts recorded in the standard, chemical, physical, and physiological works of the time in which he wrote. Finally, the reader will perceive, from the following language of Dr. Carpenter, employed on pp. 751–2 of his Essay, that, at length, seven years after the publication of Metcalfe's book, he adopts and enunciates essentially the same views. He says:—

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* This injudicious remark shows how incapable the writer was of appreciating the work he was reviewing. Had he read his author attentively, he would have discovered that the novelty was not in the facts, nor yet in the theory, but in the masterly and truly extraordinary manner in which Dr. M. attempted to support a leading doctrine of antiquity with the recorded facts and observations of modern science. Dr. M. troubled himself about the *accuracy* only, and not about the *novelty* of his facts. Selecting those which were long known, well established, and not to be gainsayed, he attempted to assign to them a new value and significance, by exhibiting their true and exact relations. The language which Dr. Carpenter appropriates to himself in the latter part of his Essay, applies with far more force and justice to Dr. Metcalfe. "The author has not sought," says he, "to increase the knowledge of existing *facts*, so much as to develope new *relations* between those already known. He has preferred, in fact, rather to build upon the foundation afforded by the generally admitted facts of physiological science, than to go in search of phenomena, his account of which might be questioned by those indisposed to admit his leading ideas." Had Dr. Metcalfe been less bold and decided in his views; had he constructed his work more in conformity with the style adopted in the standard text-books of Natural Philosophy and Physiology, and bestowed upon it some such name as the "Principles of Natural Philosophy, Chemistry, and Physiology, and their applications to Pathology and Therapeutics," instead of the startling and theoretical title of "Caloric," etc., we verily believe that his labors would have been crowned with success, and his book, instead of proving a failure, instead of being ignored and slighted, would have been praised and consulted. And had Dr. M. been less sensitive and dogmatic, and had he mingled more extensively and more cordially among the members of his profession, instead of shutting himself up so much in his closet, he would probably not now be sleeping in his lonely grave, the victim of a brain worn out with anxious, protracted, and thriftless study.

> "The views of Prof. Grove strike at the root of the notion of *latent force* of any description whatever; all force once generated being, in his estimation, perpetually *active* under one form or other; and its supposed 'latency' being a hypothetical condition, the idea of which is quite unnecessary when the force which has ceased to manifest itself is recognized under some other form. Thus, in his view, when iron is rendered magnetic by an electric current, the development of the magnetic force is rather to be looked on as the result of the conversion of the electric by the instrumentality of the iron, than as a case of the excitation of one force previously dormant, by another which is expended in thus evoking it. Such an analogy should rather lead the physiologist to look for some extraneous source of the organizing force; and to suspect that when organizable materials are applied to the extension of a living structure, and are caused to manifest vital forces, *some agency external to the organism is the moving spring of the whole series of operations.* And thus, according to the view here advocated, the vital force which causes the primordial cell of the germ first to multiply itself, and then to develope itself into a complex and extensive organism, was not either originally locked up in that single cell, nor was it latent in the materials which are progressively assimilated by itself and its descendants, but is directly and immediately supplied by the heat which is constantly operating upon it, and which is transformed into vital force by its passage through the organized fabric that manifests it. The facts already cited, which show how completely dependent the process of germ-development, both in plants and animals, is upon the constant agency of heat, and how precisely its rate may be regulated by the measure of that force supplied to it, appear to the author to be so much better accounted for upon this

view than upon either of the others, that he ventures to think that they demonstrate it almost as fully as the nature of physiological evidence will admit.

"Having thus contrasted the doctrine for which he is contending with those which are current among physiologists, the author thinks it well to point out that he no more regards heat as the 'vital principle,' or as itself identical with the 'vital force,' than it is identical with electricity or with chemical affinity. Nor does he in the least recognize the possibility that any action of heat upon the inorganic elements can of itself develope an organized structure of even the simplest kind. The pre-existence of a living organism, through which *alone* can heat be converted into vital force, is as necessary upon this theory, as it is upon any of those currently received among physiologists. And it is the *speciality* of the material substratum thus furnishing the medium or instrument of the metamorphosis, which in his opinion establishes, and must ever maintain, a well-marked boundary-line between the Physical and the Vital forces. Starting with the abstract notion of Force, as emanating at once from the Divine Will, we might say that this force, operating through inorganic matter, manifests itself in electricity, magnetism, light, heat, chemical affinity, and mechanical motion; but that, when directed through organized structures, it effects the operations of growth, development, chemico-vital transformation, and the like; and is further metamorphosed, through the instrumentality of the structures thus generated, into nervous agency and muscular power. If we *only* knew of heat as it acts upon the organized creation, the peculiarities of its operation upon inorganic matters would seem as strange to the physiologist as the effects here attributed to it may appear to those who are only accustomed to contemplate the physical phenomena to which it gives rise."

Now, it is very evident, from this quotation, that Dr. Carpenter believes,—1. That there is no such thing as a latent or dormant vital principle. 2. That "the moving spring of the organic operations is some agency external to the organism." 3. That heat is, in fact, that agency. 4. That heat is something more than a mere stimulus. 5. That "heat is transformed into vital force by its passage through an organized fabric." 6. That the peculiar material substratum in which this transformation takes place is the "medium or instrument of the metamorphosis." From these premises the conclusion is irresistible that heat and the vital force or principle are identical. And yet Dr. C., remarkably enough, expressly declares that he considers heat and the vital principle as distinct forces. This looks to us very much like trifling with both language and truth. It is saying one thing to the ear, and another to the mind. It is holding two doctrines, like the ancient philosophers—one esoteric, for the learned few, the other exoteric, for the ignorant many. In view of these statements, are we not forced to conclude that Dr. C. is either very uncertain about the correlative theory, seeing it through a glass darkly, or, having a wholesome dread of the "odium theologicum," he is unwilling to brave openly the unenlightened and mistaken prejudices of those who are so bitterly opposed to all the physical theories of life and organization?

In concluding these remarks, we must say, in justice to ourself, that we have been actuated in making this exposition purely by our love for "fair play and authors' rights." We have the highest respect for Dr. Carpenter and his well-deserved reputation as a physiologist. For a number of years we have consulted his various excellent works on physiology with equal delight and profit, and we have constantly recommended these works to our students as able and well-digested compendia of the science.

The history of the rise and growth of the doctrine of correlation is a very curious and interesting one. We have devoted considerable attention to it, and, in the foregoing remarks, have anticipated a paper on the "Physical and Teleological Theories of Life and Organization," which we have been long preparing, but which our manifold duties have thus far prevented us from completing. In that paper we purpose to analyze critically the correlation theories of Vanuxem, Grove, and Carpenter, and to notice particularly the doctrines set forth in Mayer's Treatise upon "Organic Movements in their Relations to Material Changes," (1845;) Trastour's pamphlet, entitled "Caloric, Origin, Matter, and Law of the Universe," (1847;) the essay on the "Identities of Light and Heat, of Caloric and Electricity," (1848,) from the pen of our esteemed friend, Dr. C. C. Cooper; Burnett's "Philosophy of Spirits in Relation to Matter," (1850;) Radcliffe's "Philosophy of Vital Motion," (1851;) and the elaborate volume of Z. Allen, on the "Philosophy of the Mechanics of Nature," (1852,) with which, and other kindred works, we have long been familiar. In the mean time, we earnestly hope that our distinguished friend, the American editor of Carpenter's "Human Physiology," will, in the next reprint of that work, do justice to the scientific claims of Vanuxem and Metcalfe, as he has already emphatically done to those of the present eminent incumbent of the chair of physiology in the University of Pennsylvania.

Dr. Paine dwells at considerable length upon the vital principle, examining carefully and profoundly its various properties; its remarkable analogies with the soul and with the principle of instinct; the history of its vicissitudes with medical philosophers; the different opinions advanced from time to time concerning it; the phenomena by which its existence and laws are adequately attested; its nature and its inseparability from, and relation to, living organic matter. He discusses its indivisibility, mutability, and creative power; contends that it is essentially the same in plants and animals; is independent of chemical action; resists chemical agencies; presides over organic processes and results; and is, in fact, the fundamental cause of all the phenomena of organic beings. He thinks, also, that its mutability, though designed for useful purposes, is the essential cause of disease; that its nature has been altered in man since his creation; that it is subject to extinction, and becomes its own destroyer in virtue of its formative action, and that it is a bond of union between mind and matter. He attempts, furthermore, to explain how it combines the elements of matter in plants; how it modifies and appropriates organic compounds in animals, and rearranges their elements; how far it is creative; how it influences growth, and the development of the germ, and generates motion.

The second division of the *Institutes* is devoted to Pathology; under which head, Dr. P. treats of remote and pathological or proximate causes, symptoms, morbid anatomy, inflammation, fever, venous congestion, humoralism, etc. The third part, consisting of nearly 250 pages, is an extended treatise upon Therapeutics.

Dr. Paine is an extreme solidist. Disease of the fluids is with him invariably the result of diseased solids. He rejects as inaccurate and useless all the chemical analyses of the blood and fluids which the chemists have, from time to time, placed upon record. He denies the possibility of the blood becoming a cause of disease, and ascribes the abnormal states of this fluid to deranged conditions of the nervous system. In the direct and reflex actions of the nervous system he finds an explanation of all the phenomena of pathology and therapeutics. He disbelieves in the direct action of drugs upon the blood, and thinks that their influence is exerted upon the solids, and that remedies operate like morbific causes, giving rise to a series of pathological conditions.

A valuable appendix, in which, among other topics, are discussed the progress of physiological and pathological chemistry, absorption and circulation in plants, the possibility of artificially reducing the quantity of blood circulating in the brain, etc., and two very copious and systematic indices of 175 pages, complete the volume before us.

However much we might desire to do so, our limits, already transgressed, prevent us from giving our readers a complete analysis of the peculiar views of Dr. Paine. We hasten, therefore, to conclude our remarks by earnestly recommending his work to the careful perusal and study of every one interested in physiology, whether in its aspect as a pure or an applied science. Though it contains many inaccuracies of detail, and much that is vague and merely controversial, yet the breadth and comprehensiveness of many of its doctrines, the great questions in which it abounds, and the consummate skill and learning with which these are generally treated, stamp it as a valuable treatise which should find a place in every philosophical library, and be consulted by every physician who practices his profession as a science and not as an empirical art.

ART. IV.—*A Manual of Psychological Medicine: Including the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity; with an Appendix of Cases.* By JOHN CHARLES BUCKNILL, M.D., Superintendent of the Devon County Lunatic Asylum, etc., etc., and DANIEL H. TUKE, M.D., Visiting Medical Officer to the York Retreat, etc. etc. Philadelphia: Blanchard & Lea, 1858. 8vo., pp. 536.

IT might be supposed that the difficulty, in many cases, of arriving at a correct diagnosis, and of carrying out a successful treatment of insanity, would, continually, stimulate the medical world to a careful and prolonged study of this disease, than which none tries so severely the affective feelings of all who are in any way brought into relation with the sufferer. And yet, by one of those anomalies which every now and then puzzle us, the disordered functions of the brain, constituting insanity, receive less attention in most systematic courses of medical instruction than those of any, even the most ignoble organ of the body. Sometimes the subject is not reached at all by the lecturer; generally, when noticed, it is in a meagre and most unsatisfactory manner; and rarely with any approach to a distinct delineation of pathology and treatment, or to a nicety of appreciation of the blended mental and material agencies which bring on the disease, and still less of those which are to be called into operation for its cure. How many more medical men shall we not find to enter keenly into a disquisition on the several stages of syphilis than of insanity? How many, expert in the diagnosis of pulmonary and cardiac affections, who are mere novices in all that relates to the chronic derangements of the brain? It may be alleged, that insanity is of much less frequent occurrence than syphilis, or than diseases of the lungs and heart; but this is a reason the more for a careful study of the former, so that we may not be taken unawares and unprepared when we have to encounter, and are expected to remove, this sore affliction.

The prevalent neglect of the subject brings with it results injurious both to the insane individual and to the physician: to the former, by his reason being allowed to remain captive for want of suitable knowledge and skill on the part of those who ought to give it freedom; to the latter, by the slur cast on himself and the profession, when he appears as a witness before a court of law, to give his opinion of the real mental condition of an individual, respecting whose sanity doubts may be entertained; or of one, whose insanity it is necessary to be assured, either for the purpose of justifying suitable restraint, or of exempting from penal punishment a person who, as insane, is no longer a free agent. Are practitioners of medicine prepared to appear before a court of law or a commission of lunacy, to give clear and definite answers to the questions that may be propounded to them on these several points? The answer is found in the records of nearly every case, either of real or of alleged insanity, in which physicians appear as witnesses before a judicial tribunal. Ignorance of fundamental principles, contradictions, paradox, and speculation, constitute, too often, the mortifying exhibition on the part of the medical witnesses. The judge can scarcely conceal an ironical smile; the lawyers chuckle; the attending crowd are puzzled at hearing their cherished oracles utter such strange dogmas, which partake neither of the learning of the schools nor of meditation on the subject, nor of personal observation or inquiry; but which are often mere random conjectures of the moment; a jumble of extemporaneous guesses, as if the question of the state of mind of the unfortunate individual were to be determined by a throw of the dice or by a toss of a half-dollar—the draped figure up, he is sane; the eagle up, he is crazy. These strictures are, of course, meant to be applied to the medical profession at large, but without including a fast-increasing body of physicians who have the medical superintendence of asylums for the insane, and who, at their annual conventions, make a free interchange of their experience, and offer suggestions for further improvement.

To prevent such discreditable displays of professional shortcomings, by furnishing a faithful digest of existing knowledge on the subject of insanity, is the object of the work the title of which heads this paper. The authors, in their Preface, say that they have long felt the want of a systematic treatise on this disease, "adapted to the use of students and practitioners of medicine." They very truly assert that "a knowledge of the nature and treatment of insanity is now expected of every well educated man. The India Board require it of all persons to whom medical appointments are given under their new system of competitive examination." While disclaiming the design of making any amount of reading a substitute for clinical knowledge of mental diseases, they state their aim to be "to supply a text-book which may serve as a guide in the acquisition of such knowledge, sufficiently elementary to be adapted to the wants of the student, and sufficiently modern in its views and explicit in its teachings to suffice the demands of the practitioner." With what success this design has been carried out, will in a measure be made to appear more clearly by a brief analytical notice of the work than by any anticipatory opinion of our own. The first part of the volume (to page 267) is by Dr. Tuke; the second by his associate, Dr. Bucknill.

The first chapter consists of a "Historical Sketch of Insanity among the Nations of Antiquity," mainly in regard to its extent. Having stated *in* *limine*, his conviction that, *other things being equal*, civilization does, on the whole, render men more liable to mental disease, Dr. Tuke next inquires "into the extent to which the great bulk of the people among the ancients were civilized; especially as compared with modern society." The inference is meant to be drawn, that, in proportion as the ancients fell short of the moderns in civilization, so were they less affected with insanity. The Egyptians, the Greeks, and the Romans are passed in review, and measured by this standard; and the author draws the conclusion that they had not reached that extent of civilization which, in the nations of modern Europe, "tends, in some degree, to exhaust and derange the mental powers." But that insanity was known to the ancients is shown by examples, in history, of persons who were insane, or who feigned insanity, as well as by references made to the disease by medical and other writers.

The feigned madness of Ulysses, and the real or supposed madness of Ajax, are referred to, as also the simulated dementia of King David. The graphical description of the terrible insanity of Orestes, by Euripides, is introduced on the present occasion, and also the opinion of Plato on the causes and character of insanity. "It is worthy of remark that, throughout the Mosaic Law, no provision is made which recognizes the possible occurrence of madness." A memorable example of the disease is presented in the person of Cambyses, as we find it described in the pages of Herodotus. To this example may be added that of Cleomenes, King of Sparta, which was attributed to his imitating the Scythians in drinking unmixed liquors. Pythagoras was acquainted with epilepsy. Hippocrates gives a few sketches of insanity, and the description of a case of melancholia; but, "on the whole, they are rather scanty, and would seem to indicate that he had not occasion to treat mental maladies to any very great extent." "The references made incidentally by the Roman poets to insanity are frequent." Many pages might be filled with selections from Ovid, Plautus, Horace, Virgil, and others.

The second chapter is devoted to a review of the opinions of ancient medical writers on the treatment of the insane. Among these, "Asclepiades was certainly one of the most definite in his directions in regard to the treatment of the insane." He it was who prescribed music as a remedy. Cœlius Aurelianus enters with considerable fullness into the treatment of the disease; and, upon the whole, he may be regarded as the best authority among ancient writers on this subject, and as superior even to Galen of Pergamos.

In the third chapter, the subject of "Modern Civilization, in its bearings on Insanity" is discussed. The difficulty of determining the proportion of the insane to the population, whether in regard to various countries, or in regard to the same country at different periods of its history, and the fallacy of various estimates made with this view, are stated in strong terms in the work before us. People have often confounded the knowledge of the evil with the existence of the evil—forgetting that the two things are very different. The proportionate numbers of the insane among some of the nations which we regard as civilized, are represented to be as follows: In France the number has been estimated as one in every 795; in Norway as one in 551; in the Rhenish Provinces as one in 666. In England, as we are told by the author, we cannot doubt that, were the cases not reported to the Lunacy and Poor Law Commissioners fully known, it would, when added to the numbers already ascertained, exhibit, at least, a proportion of one insane (or idiotic) person to every 300 of the population; but, as the figures now stand, it will be said that there is one insane person, or idiot, in 577 of the entire population of England and Wales. In Scotland the proportion is one in 390. Distinguishing the sexes, we find the proportion among males to be one in 616, and among females one in 543. From the results of the census of the insane and the idiotic in Massachusetts, in 1854, it appears that there was at that period one lunatic in every 427, and one idiot in every 1034 of the population; being a proportion, of both, of one in every 302. In the County of Franklin (population 31,735) the proportion was one in 229; and in Duke's County so high as one in 159.

In connection with the question, whether the most frequent causes of insanity are to be found in greater or less force in civilized countries than in those which are not civilized, we should inquire into the influence of an overworked brain, which is proved to be tasked more constantly in the former than in the latter. There is more thought, and more intensity and variety of cerebral excitement in the highly artificial life belonging to civilization, than to the simpler forms of social life of the savage or the uncivilized. "Knowledge brings with it miseries as well as blessings;" and the substitution of great mental for manual labor is too often followed, as in the case of Hugh Miller, the author of the "Old Red Sandstone," by a complete break-down, and insanity in some form or another. There are circumstances almost necessarily associated with excessive study, which are recognized causes of mental disease. "Loss of sleep, by which the nutrition of the cerebral tissue is necessarily interfered with, is one of the most important of these." But, a more powerfully contributing cause of insanity than that of great or excessive and prolonged exercise of the intellectual faculties, is to be sought for in the emotions and passions, which are constantly developed and in strained action in a highly civilized condition of society. Dr. Guislain's remark is quoted on this point: he forcibly observes, that "the people of European civilization and of North American civilization are, as it were, in a state of continual intoxication—

intoxication of the emotions, intoxication of personal dignity, intoxication arising from constantly renewed impressions. It is not thus with those nations which most closely approach a state of nature—men who live far from what we call the tumults of the world." As regards the causes of insanity, under the division of moral and physical, it has been generally thought that the former considerably preponderate. They are most operative among a civilized people; and chiefly among these latter do they display themselves in times of political and religious commotions and revolutions—which have had their share in adding to the number of inmates of lunatic asylums in England, in America, and, above all, as respects political changes, in France. We have ourselves heard Esquirol say, in a lecture at the Salpetriere, that from the first breaking out of the Revolution in 1789, down to the time in which he made the remark, (immediately after the assassination of the Duke of Berri,) no political event or change had occurred without its producing cases of insanity. Dr. Tuke accounts for the apparent anomaly, supposing it to be a fact, of there being a larger number of pauper lunatics in the agricultural than in the manufacturing districts. Drink and want, and consequent domestic suffering, produce their certain effects in the generation of insanity, in the first as well as in the last of these. But the assumption of the greater amount, proportionally, of insanity in agricultural districts is not proved—it is not true. We cannot follow the author in the statistical details which he brings to bear in confirmation of his side of the question. Of the causes which are properly physical, "the most important for consideration is intemperance." The Report of the Commissioners on Lunacy, in 1844, shows "that of 9867 cases in which the causes of insanity was ascertained, 1792, or upwards of eighteen per cent., were caused by the abuse of intoxicating liquors. In America, the proportion is stated to be very much higher among the patients admitted into some of the State asylums. But, we believe that all these figures fall far short of presenting a true picture of the complex influence of intemperance in inducing, directly or indirectly, derangement of the mental faculties. The grand cause of the general paralysis of the insane, Dr. Guislain believes to be the united action of drink and study, or chagrin." Disorders of the uterus are more frequent, and bring with them a longer train of sympathetic nervous and mental disturbances in civilized than in savage life. Among other important physical causes of insanity, intermarriage of blood relations is one. The subject of the comparative frequency of insanity in civilized and in savage life is carried out by Dr. Tuke; but we are unable, with our scant space, to borrow just now either his arguments or his facts, and we are obliged to pass on to the next chapter.

This is on the "Amelioration of the Condition of the Insane in Modern

Times, especially in regard to Mechanical Restraints." The great, and we might almost say wonderful, improvements in this respect, during the present century especially, speak well both for the increasing intelligence and humanity of the people of the present age. The gradual progress made in the right path is agreeably and instructively narrated in the present volume, both in regard to legislative enactments and individual efforts; among the latter of which, as opening the right path, were those made by Pinel in France, in 1792, at the Bicetre Hospital, and by the late William Tuke, in England, in the same year, at the York Retreat.

The "Definition of Insanity, and Classification," constitute the subjects of chapter fifth. The extreme difficulty, not to say impossibility, of giving a correct definition of insanity, one that shall convey unmistakably a clear idea of its varied character, is dwelt upon by Dr. Tuke Not a few difficulties beset, also, the subject of classification. The author, after passing in review those adopted or recommended by different writers and teachers, avows his preference for what he calls "the threefold classification of the mental faculties," the which is that laid down by the phrenologists. It consists of three classes of disorders of the mind: viz., those affecting the intellect, those of the moral sentiments, and those of the propensities—a division which, however, it may be regarded metaphysically, is by far the most natural of any previously offered. Dr. Tuke, notwithstanding, rests satisfied with simply placing before the reader little more than the typical forms of mental disease, with but slight reference to mental analysis, and with none to the pathological conditions with which these forms are doubtless associated.

The "Various forms of Mental Disease" are described in chapter sixth; the first section being on *Idiocy*, *Cretinism*, and *Imbecility*. "In general, our practical knowledge of the characters of mental disorder must, like that of other diseases, be derived from two grand sources—the subjective and the objective. The former is exhibited in what insane persons tell of themselves in their conversation and autobiographies, and is highly instructive; the latter includes the phenomena observed by ourselves as spectators of the disease." Idiocy is a congenital deficiency of the mental powers, which, until the experience of late years has shown what can be done by educating idiots, was believed to be incapable of amelioration or change. There are different degrees of idiocy. In the lower forms "the idiot is below the plant; nutrition is most imperfect, and the power of reproduction null. He would perish but for the assistance of others." In the higher manifestations of function, some idiots possess aptitudes and inclinations; and almost all, even those who are deprived of the power of speech, sing and retain a recollection of tunes. A variety of cases, illustrating the different degrees of idiocy, are introduced by Dr. Tuke. Cretinism, though allied to idiocy, differs from it in some important particulars. The former is acquired, and not congenital, although there is a strong hereditary predisposition to the disease. It is endemic, also, and in this respect differs from idiocy. The cretin is further distinguished by the brown or yellow color of the skin, the remarkably high and arched palate, and, commonly, enlargement of the thyroid gland. Cretinism is more curable than idiocy. In the former there is a defect in the development of all the organs; in the latter the defect is chiefly in the brain. Imbecility is next described, and wherein it differs from idiocy is pointed out. "Idiocy always is, imbecility is not, necessarily congenital; idiocy implies a less amount of intellectual power than imbecility."

Dementia is the theme of the second section of this chapter. It is in all cases the result of exhaustion of the mental powers from previous forms of cerebral affections, such as melancholy and mania, or from the natural wearing out of the organ, as in old age. Some, without any previous stage of mental disease, have suddenly, and, it may be, by some overpowering shock to the nervous system, become subjects of dementia. Esquirol, the first to draw the line of distinction clearly between dementia and idiocy, adduced, among other points of difference, the following contrast in their mental resources:—"A man in a state of dementia is deprived of advantages which he formerly enjoyed. He was a rich man, who has become poor. The idiot, on the contrary, has always been in a state of want and misery." Dr. Pritchard lays down four stages of dementia: viz., forgetfulness or loss of memory, irrationality or loss of reasoning, incomprehension, and inappetency, or loss of instinct and volition. Dementia is sometimes primary, but much more commonly consecutive, as already stated. The acute form of the disease is very rare.

The author next passes, in another section, to the consideration of *Delusional Insanity*—monomania, or partial insanity. The last terms are indicative of the disease. In this part of his work Dr. Tuke restricts it to *intellectual* monomania, while he admits *affective* monomania, and a mania without delirium, or instinctive monomania; which two states he notices subsequently. The most striking illustrations of monomania are found in the mental states called hallucination, illusion, and delusion; words which do not convey to the mind of the uninitiated the sense in which they are employed. We are unable to repeat even a portion of the definitions of and commentaries on them introduced by Dr. Tuke; or to notice many cases which he appositely introduces in elucidation of this very important branch of his subject—one which, in its medico-legal bearings, requires a careful study on the part of every practitioner of medicine. *Melancholia* takes up another (the fourth) section of this chapter. The disease may be simple, complicated, acute, chronic, remittent, or intermittent. The first is represented to be unaccompanied by any disorder of the intellect, strictly speaking—no delusion, no hallucination. It approaches closely to what Dr. Pritchard calls moral insanity. On this point, Dr. Tuke, after some remarks on the prejudice against admitting a man to be insane who is in the possession of his intellectual faculties, says:—"And yet, if it be admitted (and every writer of authority does admit) that a profound melancholy, for which the patient is irresponsible, is not inconsistent with the operations of the intellect, we are called upon to admit no *new* doctrine in mental pathology, when asked to believe that a like condition of the intelligence may exist with a homicidal propensity, in however small a proportion of cases this may actually occur."

But it is more especially in the next section, in which "*Emotional Insanity*" is discussed, that the various forms of moral insanity are brought to the notice of the reader. These are homicidal and suicidal mania, kleptomania, erotomania, pyromania, and dipsomania. They may be complicated with disordered intellect, or they may not; they may be automatic and sudden in their action, or not. Rarely are they, strictly speaking, monomaniacal. The cases introduced by Dr. Tuke to illustrate these several forms, are numerous and full of interest. *Homicidal mania* manifests itself under very different mental conditions. It may or may not be associated with decided lesions of the intellect. It may or may not be impulsive in character. It may or may not be preceded by appreciable premonitory symptoms. It may or may not be manifested from early life. Of *Suicidal mania*, it is said that many remarkable instances are on record of its descending from one generation to another. "It has been observed much more among insane persons who have committed self-destruction than among the sane." In regard to the influence of the seasons, "it is unquestionable that there is the largest number of suicides in spring and summer—a fact which might scarcely have been expected *a priori*." Women more rarely commit suicide than men; and less in the married than in the unmarried state. *Kleptomania*, or the propensity to steal, is sometimes strikingly hereditary. Every community furnishes examples of this form of insanity. The author sarcastically remarks:—"*Kleptomania* is never urged as a defence for the delinquencies of the poor; but when ladies of respectable connection are detected in habits of stealing, the theory of kleptomania has been found exceedingly convenient." On the subject of *Erotomania*, distinctions are pointed out between it and nymphomania and satyriasis—in the first, being a disorder of the imagination; while the two last are the effects of morbid irritation of the organs of reproduction, whose irritation reacts upon the brain. *Erotomania*, in its extended signification, not unfrequently follows upon religious melancholy We pass over *Pyromania*, or the incendiary propensity, as a speculative variety, to notice that other form of emotional insanity called *Dipsomania*, or *mania crapulosa*, or *ebriosa; oinomania*. Dr. Tuke indicates, in treating this subject, the necessity of distinguishing this disease from what may be termed a merely physiological condition, in which the human animal chooses to indulge in alcoholic beverages to excess. We try to establish a diagnosis by observing whether there are any symptoms which can be traced to primary disorders of the nervous system. "The family psychological history, again, is of great importance. Cases in which an insane parent has a drunken son, point strongly, of course, to disease. But the prominent feature of this propensity is its *irresistibility*." The disease appears, in Dr. Hutcheson's view of the subject, in three forms: the acute, the periodic, and the chronic. "The *acute* is the rarest of the three. We have seen it occur from hemorrhage in the puerperal state, in recovery from fevers, from excessive venereal indulgence, and in some forms of dyspepsia. The *periodic*, or paroxysmal, is much more frequent than the acute. This is often observed in individuals who have suffered from injuries of the head, females during pregnancy, at the catamenial period and afterwards, and in men whose brains are overworked. Like the form about to be mentioned, it is frequently hereditary, being derived from a parent predisposed to insanity, or addicted to intemperance. In such cases the probability of cure is very small." "Of all the forms of oinomania, the most common is the *chronic*. The causes of this are injuries of the head, diseases of the heart, hereditary predisposition, and intemperance. This is, by far, the most incurable form of the malady." During the paroxysm, the sufferer is "regardless," as Dr. Hutcheson says, "of his health, his life, and all that can make life dear to him." Dr. Hutcheson tells us, that he has only seen one case completely cured; and seclusion for two years was in this instance required.

Mania, the subject of section sixth of the long chapter sixth, is, perhaps, the more interesting and best recognized form of mental disease. Dr. Pritchard ranked it under intellectual insanity; by Dr. Tuke it is regarded as belonging primarily to the affective group. "While, therefore, we regard mania as usually having its origin in disordered emotions, we fully admit that the whole mind generally suffers in consequence, and that confusion then becomes universal throughout the 'countless chambers of the brain.'" Innumerable are the delusions which affect the course of thought and conduct pursued by the patient. Fury is not, as some suppose, identical with mania. As remarked by Esquirol, "If maniacs are more frequently furious than other insane persons, it must be attributed to their temperament, their extreme susceptibility, and the exaltation of all their faculties; circumstances which render them exceedingly impressible, and consequently very irritable and choleric." Among the symptoms of mania, some stress has been laid on an offensive emanation from the skin of the patient, which impresses the sense of smell of those entering his room, as would the odor of a mouse-trap. Even in acute mania we may speak of the varieties of *sthenic* and *asthenic*. "One patient may be mad from an excess, another from a deficiency of vital force. The one may require the lancet, the other, stimulants. Mania exhibits a considerable tendency to pass into dementia. General paralysis may supervene upon mania."

Puerperal Insanity is not the only form of mania which results from the condition of women produced by parturition. "On the contrary, melancholia, delusional forms of insanity, and even dementia, may ensue. The mortality from this disease is not large. Out of the ninety-two cases already referred to, only six died; and none within a period of less than six months after childbirth. Perfect recovery of the mental faculties follows in a large proportion of instances."

Chapter seventh is headed "*Statistics of Insanity*," and in its first section we have an account of the "*Causes of Insanity*." These are either *predisposing* or *exciting*. Under the first head comes hereditary predisposition, which is found in a third of the entire number of cases. Some make the proportion as high as one-half, or fifty per cent. As regards transmission by the two parents, the probability is greater on the side of the mother; and this is to be feared more with respect to the girls than the boys. That of the father, on the contrary, is more dangerous as regards the boys than the girls. As relates to the "*Relative Liability of the Sexes to Insanity*," women, as taught early by Cœlius Aurelianus, are less subject to insanity than men—whether from less inherent susceptibility to the disease, or less exposure to the causes on the part of the former, we cannot say. The causative influence of age is shown in the greater liability to insanity in the decade between twenty and thirty years, according to Dr. Tuke, and between thirty and forty years, according to Esquirol. The summer months exhibit the greatest number of instances of attacks of insanity, and the minimum influence is in the winter ones. In contradiction to the inference which would be drawn from this fact, respecting the influence of climate, it is found that the disease is much more prevalent in cold than in temperate or warm countries. The writers on this point do not, as far as we are aware, take into consideration the element of race, in comparing the different peoples of cold and of warm climates. If we compare town with country life, on the score of their influence in relation to insanity, we shall find that the disease prevails, on the continent, more in towns than in the country, while in England an opposite state of things occurs. In speaking of occupation as productive of insanity, we should carry with us the opening remark of Dr. Tuke: "It is much to be regretted that any inference should be drawn from the absolute number of patients following particular occupations, instead of from the proportion to the population at large." The author introduces tables, the first of the kind constructed, in which is given the proportion of lunatics in asylums to the numbers engaged in various occupations in England and Wales. A question in which a lively interest will be felt by all classes is: Whether single or married life is most favorable to insanity? The conclusion arrived at is, that celibacy, as well as widowhood, may be regarded as a predisposing cause of insanity in both sexes; and it would seem that the married state is a greater preservative against insanity with men than with women.

"The Exciting Causes,—moral and physical,"—of insanity, come next under notice. It is a puzzling fact that, whereas the statistics furnished by M. Parchappe, and by Pinel and Esquirol, in France, and by the Bethlem Hospital in London, and the asylum at Ghent, make it appear that moral causes greatly preponderate, those of the York Retreat in England, and of the Irish asylums, and also of sixteen hospitals in the United States, indicate a majority on the side of physical causes. Among the moral ones, domestic troubles, or grief, stand first on the list in every return made; next in order is religious anxiety or excitement. "As regards physical causes, we observe that, with one exception, intemperance ranks first on the scale, while in the second, epilepsy, and disorders more or less connected with the uterus, are equally productive of insanity." Dr. Webster tells us, that fright and love give rise, each of them, to insanity in a a greater number of cases in women than in men.

Of *Recoveries*, the proportion ranges from 40 to 50 per cent. of those who have been treated in asylums. But, unhappily, the relapses are very numerous. Dr. Thurnam asserts that these "cannot be estimated as at all less than 50 per cent., or as one in every two cases discharged recovered." Dr. Tuke traced out the history of every patient who had been under care at the York Retreat during forty-four years, and he ascertained that 63·6 per cent. had subsequent attacks; that is to say, two out of every three cases of recovery from the first attack. As otherwise expressed, "in round numbers, then, of ten persons attacked by insanity, five recover, and five die, sooner or later, during the attack. Of the five that recover, not more than two remain well during the rest of their lives. The other three sustain subsequent attacks, during which at least two of them die." Notwithstanding this melancholy picture, we have the consolatory reflection, that, during long intervals of mental health, (in many cases of from ten to twenty years' duration,) the individual has lived in all the enjoyments of social life. The question has been often asked: "Is the *mortality* greater among the insane than the sane?" "Undoubtedly it is." But this tendency to shorten life is not seen in the chronic form of the disease. It is only, or mainly so, in the acute stage.

Here terminates Dr. Tuke's share of the work before us. The remainder is written by Dr. Bucknill, and includes the chapter on the diagnosis, pathology, and treatment of insanity, and an appendix of cases. Our rapidly waning space, contracted as it is at the best, within very narrow and inadequate limits, makes it doubtful whether we shall be able to continue even the curt analysis with which we have treated Dr. Tuke's labor.

Chapter eighth is on the "*Diagnosis of Insanity.*" Dr. Bucknill points out the difficulties of the subject, and tells us that it presents itself to the physician either in a purely medical, or in a medico-legal point of view. According to the answer given in the first supposition, will depend, not only the medical treatment but the enjoyment or the loss of personal liberty. When the question is a medico-legal one, it may occur either in civil suits or proceedings, or in criminal trials. But in all these circumstances the ground of the diagnosis must be the same. Amid the difficulties in determining the question, the physician, called to see a patient who is supposed, or feared to be insane by his family or friends, will act wisely, as a preliminary measure, in making himself acquainted, as far as he possibly can, with the antecedents and history of the patient. In this investigation he must not, however, expect to be aided by receiving frank and full statements and explanations from the near relatives of the patient, who often seem bent on mystifying the whole subject—especially in denying the slightest taint of hereditary insanity in their family. The following considerations early press themselves on our attention, viz., *hereditary tendency, previous attacks, change of habits and disposition.* In reference to this last point, it must be remembered that it by no means follows, because a person has become "a changed man," he must, therefore, be an insane one. In estimating exaggerations or alterations of character, we must be careful to make allowance for those which take place naturally, and in healthy minds. Regard must be paid to the vagaries of hysteria, in taking account of sudden and remarkable changes of character. A careful inquiry into the habits of the patient will often enable the physician to discover an adequate cause for the production of insanity; as in the case, for example, of intemperance, which, when ascertained, will preclude the necessity of any further inquiry.

After these preliminary inquiries, the physician may now be supposed to be introduced to his patient, to whom he will be careful not to make any allusions respecting the mental disorder of the latter, but, instead, inquire after any ailment or bodily infirmity with which he may be afflicted. *Peculiarities of Residence and Dress* are worthy of attention. In the room occupied by the insane, things are generally found out of place. Articles of clothing are scattered around, everything is disarranged, and the dress and person of the patient often bears evident marks of want of care and cleanliness. Alone, these appearances are not entitled to much weight; otherwise they would condemn to seclusion a large class of habitual slovens and slatterns,—not to speak of college students and authors,—who are lamentably deficient in what phrenologists call the organ of order. There are seldom *Peculiarities of Bodily Condition* to aid us in the diagnosis of insanity. *Peculiarities of Voice and Gesture* are, on the other hand, often strongly expressive of mental disease, and they merit a careful study on the part of the physician. The *Physiognomy of Insanity* is also full of meaning; and it is handled with ability by the author. The principal characteristic in many of the patients laboring under mania, is the peculiar want of harmony in the expression of the features. The hair harsh and bristling, and the skin of the scalp becoming loose, are symptoms worthy of notice.

> "The medical man should never omit to examine the ears. The discovery of a shrivelled ear tells an undeniable tale of profound mental disease. Altogether, the effect of mania, and, indeed, of all forms of insanity, is to stamp upon the patient a remarkable degree of ugliness; and there is no symptom of returning health more trustworthy and more pleasing than the restoration of personal beauty."

The physician passes from the observation of the signs of mania to the active investigation of the mental state, by questioning and conversing with the patient. The conversation should gradually be turned to induce the patient to speak about himself, and such topics chosen as will draw him out into an expression of his feelings, hopes and aspirations, crossed ambition, etc., and his plans; in describing which, the special hallucination or delirium will show itself. The means by which these results are obtained are clearly indicated by Dr. Bucknill. The diagnosis of mania had been preceded by that of dementia, and is followed by that of other forms of insanity—melancholia, monomania, the moral insanity of Pritchard, kleptomania, and loss of the muscular power ensuing—general paralysis. The *Detection of Feigned Insanity* is a leading point in the diagnosis of mental disease. "The most important diagnostic point of feigned insanity is the want of coherence of the manifestations, not only with mental diseases in general, but with the form or variety of insanity which is feigned in particular." If the patient can write, he should always be encouraged to do so. It has been observed that many of the insane who are backward in saying anything which would imply mental disorder, are quite expansive, and show their particular delusions on paper.

The chapter on the *Pathology of Insanity* evinces, on the part of the author, a suitable knowledge of the minute structure of the brain, and careful observations of the changes which it undergoes in the production of insanity. He does not, however, pretend to affirm, that a connection can always, or even often, be observed between obvious organic lesions and the functional changes which constitute mental disease; nor would he affirm that such a connection will ever be perceptible to our senses, although he believes that it does exist. The little cells of the vesicular neurine of the brain "are the agents of all that is called mind, of all our sensations, thoughts, and desires; and the growth and renovation of these cells are the most ultimate conditions of mind with which we are acquainted." And again; "Not a thrill of sensation can occur, not a flashing thought or a passing feeling can take place, without changes in the living organism; much less can diseased sensation, thought, or feeling occur without such changes—changes which we are not able to detect, and which we may never be able to demonstrate, but which we are, nevertheless, certain of." The following conclusion is reasoned out: viz. "that *diseased conditions which affect the mental functions must have their seat in the gray matter of the cerebral convolutions*." As regards inflammation, we are told that, although it "may not be the actual condition of insanity, it is not unfrequently its cause." The explanation of this state of things is fully given by the author. Stress is laid by him on congestion of the cerebral convolutions as a common and sustaining cause of insanity. In "a congeries of organs," like the brain, there may be depression of function in one part and excitement of function in another. There is a difference also in the susceptibility of the different cerebral organs to be disturbed by morbid causes. The author, in these few sentences, uses, without perhaps his being aware of it, the very language of phrenology. The efficient causes of insanity are often defects of nutrition, as from loss of blood, impediments to healthy digestion and assimilation. "The commonest appearance met with in the brains of insane persons is that of shrinking;" measurements of the extent of which, in a large number of cases, are given in the present work. The author enumerates the apparent and exciting causes of the nutritive defect which results in cerebral atrophy and insanity. These are, 1. Poverty of blood; 2. Derangement of the ultimate structure between the nervous and vascular systems; 3. Molecular change effected by blows or violent concussions; 4. Consequences of inflammation and of frequent or long-continued congestion; 5. The most numerous class is that depending on want of rest. "Want of refreshing sleep we believe to be the true origin of insanity, dependent upon moral causes." Insanity by *sympathy* with lesions or irritations of other organs is noticed, and its mode of origin explained in this chapter. Next follows *an account of special pathological changes*, to which we are able merely to advert, while adding a remark by the author; that the most careful observations made on this subject, in France, are by M. Parchappe, Inspector-general of asylums in that country. Dr. Bucknill's summary notices of the Frenchman's labors are well arranged and selected, and make up, together with accompanying comments, the larger part of the chapter. "*Hypertrophy* of the brain is an interesting but rare form of pathological change. Pathological peculiarities in the thoracic and abdominal viscera are noticed. *Diseases of the heart and lungs* are common among the insane; and those of the *stomach* bear to insanity a relation of the highest importance. In acute melancholia, attended by refusal of food, the mucous membrane of this organ is frequently found to be inflamed, and softened or ulcerated. The *liver* does not suffer in an especial manner, and the *kidneys* are remarkably free from diseases in all the forms of insanity. The *reproductive organs* are frequently the seat of diseases, or of abnormal function. We cannot follow the author in his statements on the *Humoral Pathology of Insanity*, nor on those on the *Pathology of General Paralysis*, all of which are pertinent and suggestive.

The *Treatment of Insanity* is the subject of the tenth and last chapter of the volume. Dr. Bucknill begins with some general observations on the opinions of those who would not only give prominence to, but who would rely exclusively on, moral treatment in the sense in which they understand it. He next notices the principles of treatment laid down by a few authors, whose names stand highest in psychological medicine. First among these is Pinel, "the father of the modern treatment of insanity." Happily, when we read of the practice of beating the insane, and of other means of inspiring fear, it is as a portion of retrospective history, respecting whose records there is now one universal feeling of reprobation. Farther reference is made to the ameliorations of treatment brought about by Pinel, and based upon sound principles, and, in a great measure, completed by Esquirol. "The treatment of insanity may be considered under three heads—the Hygienic, the Moral, and the Medicinal." The *Medicinal Treatment*, the first discussed by the author, ought, he says, to be founded upon the ultimate diagnosis, which, as nearly as possible, refers the symptoms of each individual case to the exact pathological condition from which they arise. It may be divided into that of the acute and the chronic forms of the disease, into that the aim of which is curative, or which looks only to palliation; and in the former, into that which is adapted to the outbreak, and that to the more tranquil period of the disease. *Bleeding*, as a general practice, is not now had recourse to in the treatment of insanity. Perhaps, in this particular, we have passed from one extreme to another. The author tells us, that in the treatment of some two thousand cases he has never yet used the lancet. Preference is given, when abstraction of blood is indicated, to cupping and leeching. He "has, for many years, used *tartrate of antimony* in a certain class of cases of mania with the happiest results." The "benefit to be derived from it appears to bear a close relation to the tolerance which the patient has for it;" and hence, when its use is attended with nausea and depression he discontinues it. The cases best adapted to the use of the tartrate are of what may be called sthenic mania, occurring in full habits, with a strong pulse. *Calomel* ought not, as a rule, to be given in the treatment of mania, on account of the irritability of the nervous system which it tends to produce. Occasionally, as a purgative in combination with vegetable articles of this class, or as an alterative, it is serviceable. The right use of *opium* in the treatment of insanity is a question of paramount importance in psychological medicine. "At the present time the skillful and discriminating use of this drug may truly be called the sheet-anchor of the alienist* physician." Its dose, when the indications for its use are clear, ought to be large. It is inadmissible in mania so long as cerebral hyperæmia exists. Instructive reflections are made in reference to the complication of disease of the brain, such as coma and narcotism, in some cases in which opium has been used. We have seen such a complication in a fatal termination of delirium tremens. Dr. Bucknill believes that none of the narcotics, including "the new toy, Indian hemp," deserve a moment's consideration, in the treatment of mental disease, except opium and hyoscyamus. *Stimulants* and nourishment, in some cases of insanity, act like narcotics. As to *purgatives* and *aperients*, the author's opinion is, that a brisk purge is often more useful than any other remedy in the course of chronic and incurable insanity; but, as a means of curative treatment, active purgation is of little value. *Counter-irritation and derivation* are useful when employed in the right cases at the right time. Croton oil, rubbed on the shaven scalp, after the subsidence of acute symptoms and when the head is cool and there are no signs of plethora, is attended with excellent effects. *Tonics* suggest, of course, the use of quinine, which, dissolved in port-wine, often acts efficaciously in the latter stages of mania, in broken-down constitutions. *Bathing* is dwelt upon as among the most useful of the secondary remedies. The shower-bath, of not more than three minutes' duration, is occasionally useful in the intercurrent excitement of mania and of monomania: and as a tonic in irritably nervous and hysterical patients, and in sane melancholic ones.

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* We object to this word here, so long, at least, as alien carries with it, in common speech and in written composition, a meaning of universal recognition, viz. a foreigner or a native of another country than of that in which he is a temporary resident. The Alien Office in England had to deal with aliens, (foreigners,) but not with insane persons. The chief and his subordinates in it might have been called alienists.

In more violent cases of cerebral hyperæmia, in acute cases of insanity, cold to the head alone is much more efficacious than the bath. The use of the warm-bath, either alone or in combination with cold to the head, is a most important remedy in the therapeutics of mental disease. The simple warm-bath allays irritation and promotes sleep. Here we would beg our readers not to confound, as is so often done, a warm with a tepid or a hot-bath, and to remember that the range of a warm-bath is between the limits of 92 and 98 degrees of Fahrenheit. The duration of the warm-bath will vary from half an hour to an hour.

A *résumé* of the principles upon which active remedies should be prescribed follows the notices of each of them separately. It evinces an observing and logical mind. We cannot do more now than merely to recommend a careful perusal of what is said by the author on the *Moral Treatment of the Insane*, which has been so often confounded with the physiological treatment. He quotes, in terms of approval, Dr. Conolly's recommendation of what may be called "an *individualized* treatment"—the beneficial exercise of a sane mind, happily constituted and well trained, on the insane mind. We quote but two sentences, out of pages, on the subject of moral treatment: "The most efficient method of loosening the hold of delusive opinion is by stimulating the exercise of healthy thought." "Argument is notoriously useless in the treatment of insane delusion." The subject of *Mechanical Restraint and Seclusion* is examined with brevity, but in such a manner as to leave no doubts of the views and settled practice of the author. These may be imparted to the reader in this single sentence: "We have for fourteen years conducted a large asylum, whose admissions during that time have amounted to eighteen hundred cases, without having had occasion to resort to the employment of mechanical restraint in the treatment of insanity."

A frontispiece to this volume exhibits "Types of Insanity," from photographs taken in the Devon County Lunatic Asylum; and in an Appendix we find a record of cases illustrated by these portraits.

In conclusion, we can say, in all sincerity, that seldom have the expectations raised by the language of the Preface been so fully realized in the execution of the work as they are in the volume of Drs. Bucknill and Tuke. Its publication removes all excuse that may, hitherto, have been alleged by students and practitioners of medicine for neglect of the subject, owing to the want of a work of insanity for ready reference—one which, like the present, contains sound principles, enforced and illustrated by a series of pertinent and well-digested facts, evidently accumulated by long personal experience, and much reading. Where we have found so much to commend, we may the less regret our inability, from want of space for the purpose, to interrupt our condensed synopsis by the language of criticism.

ART. V.—*Outlines of a Course of Lectures on the Principles and Practice of Surgery*, delivered by E. GEDDINGS, M.D., Professor of Surgery in the Medical College of the State of South Carolina. Prepared by THOS. S. WARING, M.D., and SAMUEL LOGAN, M.D., from notes taken during the course. Published with the consent of and revised by Professor GEDDINGS. 8vo., pp. 560. Charleston: S. G. Courtenay & Co. 1858.

THE May number of the *Charleston Medical Journal and Review* announced the resignation of Professor Geddings, of the chair he had so long held in the Medical College of the State of South Carolina. After having had, what the same journal, in a biographical sketch of the Professor contained in the number for May, 1857, styles the "proud satisfaction" of receiving the first degree at the first commencement of that institution, in the spring of 1825, he was connected with it for some time as demonstrator of anatomy, and in 1837 he was appointed to fill one of its chairs. Professor Geddings had then been associated, for many years, with the medical school in Charleston; and we have the authority of the journal cited above, for declaring that it has owed to his labors and name a large measure of its popularity and influence.

The volume before us was published with the hope, as expressed by Professor Geddings himself, in a few prefatory remarks, that it might prove useful to his pupils as furnishing an outline of his course of lectures, which could be filled up by them while listening to his instructions; and also with the hope that, among the numerous alumni of the Charleston school, it might recall associations upon which he, at least, should always look back with pleasure. The first of these hopes has, of course, been frustrated by his resignation; the second will doubtless be fulfilled; in fact, the step he has thought fit to take must naturally enhance the value of this publication to his former pupils.

This work is one which will be esteemed more particularly by those who have listened to Professor Geddings's instructions; but, from the very respectable reputation of that surgeon, it also possesses interest for the profession at large. No one can expect to find therein, in an abstract of sixty-eight lectures, an approach to a complete treatise on the principles and practice of surgery. Delivered without notes, and abundantly illustrated, this abstract must fall much short of the lectures themselves; yet it can be taken, according to the Professor's own statement, as a fair and faithful exposition of the facts and principles of surgery, which he has taught for many years. Some of the omissions have been supplied by foot notes, and by ten extended essays, contributed by the editors.

This course of lectures is divided into three parts, which are thus defined in the editorial preface:—

> *Part I.* Is devoted to the discussion of those affections of a strictly *constitutional* character, which, though often resulting in local complications, are not necessarily confined to any particular tissue or locality; such as inflammation, syphilis, and the like.
>
> *Part II.* Refers to all those affections, accidents, or operations which appertain to active *structures* or *tissues* only; these affections, operations, etc., being *particular in kind*, but occurring in many different portions of the human frame; such as fractures, aneurism, etc.
>
> *Part III.* Comprehends all accidents, affections, and operations of a *strictly local* character; this division being, as the Professor calls it, *Regional or Topographical Surgery*. Compression and concussion of the brain, ozœna, hare-lip, tracheotomy, etc. etc., come under this head.

It seems to us that a course of lectures on surgery should always contain a fourth part, devoted to general considerations on surgery, by which the course should be opened. We mean that there should be a part wherein surgery is defined, and its end and object stated, when general directions as to surgical diagnosis and therapeutics are given, with the rules to be observed in all operations. In this part, the minor operations, cauterizations, local and general bleedings, the application of the seton and the moxa—in a word, minor surgery should be treated of. There may have been some good reason for making this omission, but no reference is made to it, and we think it one to be remarked.

If an attempt had not been made by Drs. Waring and Logan to supply omissions, we should pass over all others; but, under the circumstances, it would be wrong not to point out some of those found in the work, that our readers may judge how very imperfect it is. In so doing, we do not wish to be misunderstood; we are aware that the publication makes no claim to be a complete treatise on the principles and practice of surgery, and we are desirous of making every allowance for its deficiencies.

There is nothing in the work upon varix, or any of the affections of veins, except a few remarks upon varicocele, and upon arterio-venous aneurism of the elbow. Not a word is said about tubercular affections which require surgical treatment, unless it be a short chapter on what is badly styled lymphatic swelling and abscess. In a long essay on diseases about the anus, there is not a word in regard to fissure of the anus. In the article upon vesico-vaginal fistulæ, the cauterization of Dupuytren, and the barbarous operations of Jobert are commended, while neither Sims nor Bozeman are at all mentioned. Tetanus is not treated of, though so commonly met with in Charleston, and in that section of country where this work will principally be read. Diseases and injuries of the eye-ball and its appendages are not mentioned, with the exception of a few words upon syphilitic iritis, in the essay upon syphilis; nor is anything said of affections of the vertebral column.

The sins of commission of the editors, or what we esteem to be such, we shall be still more brief in noting. We must express our astonishment to see it taught at the present day, and by a young man, that gonorrhœa, "though altogether local at first, very soon becomes constitutional," (p. 524;) and it is with sincere regret that we find it advised in the treatment of primary or local syphilis, "to adopt a constitutional treatment in conjunction with the local from the first," (p. 70.) A chancre may or may not be followed by constitutional syphilis. By giving mercury, you may, therefore, subject your patient unnecessarily to its debilitating influence, and, what is very important, you place him in such a condition that he does not really know whether he has syphilis in his system or not; for mercury does no more than retard the breaking out of the symptoms. We should always wait for a constitutional symptom to declare itself, and we lose nothing by so doing.

Though the work has been revised by Professor Geddings, we feel more inclined to charge typographical errors upon the editors. Mistakes in spelling proper names are numerous. We find *Physic* at page 411, and, at page 474, *Physick;* at pages 199 and 220, and in the index, we find *Dessault;* at page 139 *Ambrose Pare*, and at page 305 *Parê; Sedillot, Berard*, and *Negrier*, at pages 47, 49, and 393, should have, of course, the accent over the first *e;* we find *subsaltus tendinum* at page 47, and in the prescription at page 71, *vini. rubri.* These notices are sufficient to show that proper care has not been taken in the publication of these lectures.

As far as can be judged of them from this work, the surgical principles, and the practice also, which were taught by Professor Geddings, are very correct. What is most particularly to be commended, is the care manifested to teach his pupils not to endanger the lives of their patients by attempting too much. In some particular points, his practice is not that which we like best ourselves. For instance, in amputations the flap operation is preferred by him to the circular. So far as the safety of the patient is concerned, he declares that there is no difference whatever; it is only a matter of taste with the surgeon, (p. 251.) We are satisfied ourselves, that in the continuity of the limbs, the circular operation should always be performed, when the injury will admit of it. By this method the wound inflicted by the knife is always less extensive; and in dressing it, analogous parts can be placed in contact with each other, and the cicatrice is in the centre of the stump, which is by far the best place for it. In regard to the length of time after dislocation at which it is proper to attempt reduction, three months for the humerus, and six weeks for the femur, are set down as the utmost limits within which an attempt at reduction should be made, (p. 197.) Now it is not right to fix a time in this manner, so much for each joint, without paying attention to the peculiarities of the particular case. The time must vary in every case of dislocation, and the causes of the variation are the inflammation following the injury, and the degree of displacement. A dislocation, followed by violent inflammation will, when old, present more resistance than one which had not been followed by inflammation. The degree of displacement is a still more essential point. Malgaigne declares that he would not hesitate to attempt the reduction of an incomplete luxation of the humerus at the end of a year, of a sub-coracoid luxation at the end of six months and more; while, after four or five months, an intra-coracoid luxation would leave him but little hope, and he would have still less, after two or three months, for a sub-clavicular luxation. (*Traité des Frac. et des Lux.* Tome ii., p. 187; Paris, 1855.)

In the operation of lithotrity, the Professor teaches that, as regards the condition of the bladder, it is a matter of no consequence whether it be full or empty, (p. 547.) Certainly there is much less risk of seizing the mucous membrane of the bladder when it is distended; and we have always seen Civiale, and other most experienced operators, fill the bladder with warm water before operating. In the treatment of aneurism, the ligation of the artery is taught to be far preferable to the application of compression. This question has, however, been treated of at length in this journal, in the May number for 1857, and we will not enter into it here.

ART. VI.—*Evil Results of Over-Feeding Cattle. A New Inquiry; fully Illustrated by Colored Engravings of the Heart, Lungs, etc. of the Diseased Prize Cattle lately exhibited by the Smithfield Cattle Club,* 1857. By FREDERICK JAMES GANT, M.R.C.S., Surgeon and Pathological Anatomist to the Royal Free Hospital. 8vo., pp. 39. London: Churchill, 1858.

ALTHOUGH the attention of the public has, during the past few years, been directed to the subject of diseased meat as occurring in the markets, yet it has not awakened that amount of interest which its importance undoubtedly demands. The London press has been especially denunciatory in its expressions in regard to the many impositions practiced upon the lower classes, and Mr. Gamgee has written several forcible letters on this subject as having a direct influence on human health. More recently, Mr. Gant has investigated the conditions of the meat of over-fed cattle as an article of food; while in our own country, the subject of hog-cholera, still-fed, tailless cows, and of swill milk, is at present the *fashiónable* topic of discussion. Mr. Gant has directed his observations to the prize cattle exhibited at the "Smithfield Cattle Club," in 1857. The object of this association is to test "the best method of rearing cattle as an article of food;" and it was to see how far they had succeeded in their intentions that he visited the fair. He found that the judges had awarded the prizes to unwieldy, bulky beasts, overloaded with fat, gasping for breath, and scarcely able to move. The principal pathological changes were congestion of, and tubercles in, the lungs; the conversion of the muscular fibrillæ into fat; fatty degeneration and enlargement of the heart. In the instance of a prize steer, the heart had undergone the latter change, and it was so softened at its apex as to allow of the introduction of a blunt probe into the substance of the left ventricle, where the muscular fibres had given way. By far the most frequent variation from the normal state, was "the conversion of the heart into fat," preventing this organ from carrying on its functions to that extent necessary for the health of the animal; its contractile power was greatly diminished, causing the blood to circulate feebly, and inducing, consequently, congestion of the lungs, with enormous difficulty in breathing. Mr. Gant concludes his inquiry by suggesting that "breeders, feeders, exhibitors, and prize judges, alike visit the slaughter-houses; let them do this with a due knowledge of diseased appearances, and let them thus discover that system of rearing which is most compatible with the health of the cattle, and which produces the largest amount of nutritious food for man."

We are glad to see that the surgeon and pathologist to the Royal Free Hospital has taken this matter into consideration, and we regret that he has not pursued his inquiries further; but yet must thank him for his praiseworthy zeal in awakening attention to the subject.

Why should not our health-officers supervise our meat markets, as well as direct their attention to quarantine duties? or, why should not a competent individual, well versed in pathology, be appointed as meat inspector instead of the mere apologies for men who now hold that office?

In thus noticing this work, we do not consider that we, as physicians, are particularly concerned in rearing cattle; but we must assume that we are more than interested in its hygienic and dietetic bearings, and that medical men should supervise the rearing of cattle in regard to the nutritive qualities of food. In our own country, where agricultural fairs are so abundant, and where much attention is paid to raising stock, we may hope to look for some change in the present system.

The work is illustrated by twelve wood-cuts and seven beautifully colored engravings, and is in perfect keeping with the accustomed taste and liberality of its distinguished publisher, Mr. Churchill. We would recommend it to the attentive perusal of the scientific farmer and breeder.

ART. VII.—*Elements of Inorganic Chemistry; including the Application of the Science in the Arts.* By THOMAS GRAHAM, F.R.S.L. and E. Late Professor of Chemistry in University College, London. Edited by HENRY WATTS, B.A., F.C.S., and ROBERT BRIDGES, M.D. Second American, from the second revised and enlarged London edition. 8vo., pp. 852. Philadelphia: Blanchard & Lea, 1858.

THE first portion of this work, comprising about one-half of its present contents, was edited by Dr. Bridges, in 1852, and at the time of its appearance was one of the most reliable guides to the student and teacher, and at once took a high position as a valuable standard production. The additions of the American editor were necessarily small, as the author had treated each subject in full, and had embodied in the work almost all the recent improvements and discoveries in the science. As the work now appears, it forms a complete repertory of all the facts and theories of the department of which it treats. Many changes and valuable additions have been made by the author and by Mr. Watts, the English editor, who has, in a supplement of nearly two hundred pages, so treated of all new facts and recent improvements as to render the first part of the work as full as the last. This supplement should have been inserted in the general text; a circumstance which would, in our opinion, have rendered it more complete. With the exception of some typographical errors, the volume is gotten up in a most unexceptionable manner; the type and binding are good, and the letter-press is amply illustrated by wood-cuts. We have no hesitation in recommending the work as being probably the most complete, in every respect, on Inorganic Chemistry in any language.

ART. VIII.—*Handbuch der Praktischen Chirurgie für Artze und Wundärzte.* Manual of Practical Surgery. By VICTOR VON BRUNS, M.D., Professor of Surgery in the University of Tübingen. Sections first and second; eight numbers. pp. 1640, 8vo. Tübingen, 1853–4–7.

THE King of Wurtemberg, in whose dominions the University of Tübingen is situated, an institution which has been the pride of his State and the glory of Germany for the last half century, was the first to transplant some of the disciples of the Vienna School to his alma mater, the fame of which he has ever been zealous to preserve and extend. He charged his commissioners to invite four of the most talented pupils of Rokitansky to take chairs in the university. The selection consisted of Bruns, Roser, Oesterlein, and Wunderlich, now a bright galaxy, stars of the first magnitude in the Esculapian constellation. Our author was found engaged in the preparation of a work on general anatomy, which, though the product of a mere medical student, a lad in appearance, created a profound sensation; abounding, as it did, in microscopical discoveries and new facts on analytical organic chemistry. Dr. Bruns was installed as professor in ordinary of surgery in 1852, and, with his colleagues, just arrived from Vienna, forthwith promulgated its principles. The title-page of the work informs us, by the appended "von" to the author's name, that he has lately been ennobled—an act of gracefulness which does more honor to the king who conferred it than to the recipient, whose fame certainly rests on a more imperishable basis. The Manual of Surgery bids fair to be a copious one; the four volumes now published, containing upwards of seventeen hundred octavo pages, treat only of the special surgery of the brain and its coverings, along with the organs of mastication and taste.

The English reader, knowing the proneness of the Germans to be too speculative and prolific in their writings, would naturally infer an unnecessary and confounding prolixity at the sight of these large volumes, comprising matter which he is wont to see dispatched with perhaps one-eighth the expenditure of paper. A short perusal, however, of their pages soon dispels these apprehensions, as the style is essentially English in clearness, conciseness, and terseness. The work is designed to be strictly practical; and this aim is never lost sight of, every line embodying facts as observed by himself or others, or rigidly inferred by an "*a posteriori*" mode of reasoning. Whatever is hypothetical is but cursorily noticed as an *on dit*.

The scheme itself on which the book is written tends to facilitate the study of its subjects, rendering it a complete repertory and codex, wanting only an alphabetical arrangement to make it an Encyclopædia of Surgery. The description of diseases is always preceded by their pathological anatomy, as observed, for the most part, by the author himself; and great stress is laid on this as the brilliant side of science. Etiology, Symptomatology, and Therapeutics follow. Each particular case is accompanied by illustrative observations, gleaned from his own experience, or from that of reliable authorities of every nation. Special attention is also given to medico-legal considerations wherever they can be fitly introduced.

The work comprises, first, General Surgery; under which head are described the materials, bandages, instruments, and apparatuses, as well as the employment of surgical operations, with rules and precepts to be observed in their performance. Secondly, General Surgical Pathology and Therapeutics, and the description of the processes which induce structural changes, aside from local modifications. Thirdly, the surgical affections of each separate region of the body, preceded by an anatomical description of each region.

The following singular case of osteatome of the scalp is the only one on record, and we therefore deem it unnecessary to apologize for presenting it to our readers. The subject, a man eighty years of age, was admitted into the Obuchoff Hospital, St. Petersburg, laboring under a tumor situated on the occiput, which he had had since his sixth year. He stated that in his infancy he was affected with tinea capitis, that suddenly disappeared, but was soon followed by a tumor, which, being treated by warm fomentations, softened, broke, and suppurated for a long time, but finally closed, its volume being at the time somewhat diminished. When he was twenty years old a metallic ligature was cast around its base, but violent inflammation supervening, further persistence was deemed impracticable. The tumor was then still movable, but soon became adherent to the cranium. He refused having it interfered with, and bore the inconvenience with patience until his death, which ensued soon after his admittance into the hospital, in consequence of cerebritis. The tumor measured, in its greatest circumference, two feet; from one ear to the other, twenty inches; at its base, fifteen and a half inches; and from apex to base, one foot seven inches; its weight was ten pounds. It received its covering from the widely-distended scalp, upon which the hair stood in isolated patches. The skin formed folds near the nape of the neck, with grooves three inches deep. The inner substance of this mass consisted of an ivory formation, with cells containing a yellow, spermaceti-like matter. The aponeurosis of the head formed folds on the base of the tumor, from which innumerable vessels penetrated the bony mass. The occipital bone had been entirely absorbed from the pressure of the tumor, and the first two vertebræ were reduced to a bony plate.

The diagnosis and treatment of fractures of the skull, as well as their bearing on forensic medicine, are fully and ably considered. The statistics on the subject of hare-lip are interesting; and we regret that want of space compels us to close this brief notice of a ponderous but highly valuable work, which should find a place in the library of every surgeon.

ART. IX.—*A Treatise on Rheumatic Gout, or Chronic Rheumatic Arthritis of all the Joints.* By ROBERT ADAMS, M.D., Surgeon to the Richmond Hospital, etc. Illustrated by wood-cuts and an Atlas of plates. 8vo., pp. 362. London: Churchill, 1857.

DURING the past few years there seems to have been a chronic *cacoethes scribendi* among medical men, more especially abroad. Without throwing any new light on the morbid anatomy and treatment of disease, the object of some authors appears to have been merely to show the public how old facts could be dressed up and reproduced under a new garb. Of the numerous works, however, which we have seen on the subject of gout and rheumatism, there has been none to which we more cordially extend a warm welcome than to the one before us. Dr. Adams has made good use of his opportunities, and has acquired a high reputation by his many valuable contributions to surgical and pathological science. The volume now before us consists of fourteen chapters; several of which are devoted to the history, pathology, symptoms, and treatment of this affection; but by far the greater number are taken up with the discussion of the disease as it occurs in the different articulations. Some of these descriptions would in themselves form valuable essays, and do credit to any author. The style is clear and accurate, and the work is illustrated by excellent drawings and interesting cases; it is, in fact, one of which he and his countrymen may justly be proud. We heartily commend it to the perusal of our readers, and trust we shall be able, at no distant day, to present them with a critical analysis of its contents.

Original Communications.

ART. I.—*A Case Presenting Choreic Symptoms, Terminating in Death.* By O. C. GIBBS, M.D., of Frewsburg, New York. Read before the Medical Society of Southwestern New York, February 3d, 1858.

CHOREA, uncomplicated with other diseases, is seldom fatal, and, in the onset of the attack, is usually amenable to treatment. The case which I am about to relate possesses some points of interest; and, though wanting the completeness of post-mortem observation, may not be wholly unworthy of record.

On the 15th of June, 1857, I was called to see Miss Cowen, aged thirteen years, and found her laboring under severe local pains, affecting principally, though not exclusively, the lower extremities. The pains, which were paroxysmal and migratory in their character, attacked most frequently some of the joints of the extremities; but occasionally seemed to be located in the muscular tissue; sometimes in the head, side, etc. There was no swelling or redness of any of the parts affected. The tongue was slightly coated with a whitish fur, and the pulse was accelerated to a hundred beats a minute. She was sweating profusely and continuously; the sweat standing in great drops upon the surface of the body, and not unfrequently dropping from the nose, cheeks, and other parts of the face.

She had been suffering from these symptoms for about a week, previous to which time her health had been pretty good. She had never menstruated, nor had she seemed to suffer from a want of establishment of this function. At the time of my visit she was sitting up, was cheerful, and in good spirits.

The absence of the catamenia, the age and rather slender constitution of the patient, excited suspicions of hysteria; but, in view of all of the circumstances, I could not look upon the case as one of the protean manifestations of that disease. Suspecting that the symptoms had a rheumatic origin, I ordered five grains of calomel to be taken immediately; to be followed, in four hours, by black draught sufficient to procure free catharsis. Five grains of Dover's powder and twenty drops of the wine of colchicum were ordered to be given every six hours, to be commenced with immediately after the operation of the cathartic.

Under this treatment the local pains soon disappeared, and the pulse became less frequent; the sweating, however, continued profuse, and the anæmic condition of the patient became more marked. On the fourth day of treatment I discovered some irregular muscular motion, apparently of a choreic character, about the shoulder, arm, and hand of the right side. There was an almost incessant shrugging of the shoulder and working of the fingers. When voluntary motion was attempted with the affected hand it was performed with unsteadiness and irregularity, but always successfully. I now ordered the tincture of cimicifuga, in drachm doses, and the tincture of chloride of iron, in doses of ten drops, each to be repeated every six hours. This treatment was continued for three days; the choreic symptoms gradually increasing. The deficient nervous integrity extended to the leg of the affected side; walking was accomplished with difficulty, and the foot seemed to drag after the other. The patient wept often, and without apparent cause, and smiles and tears were not unfrequently present at the same time. As the tincture of chloride of iron did not seem to set well upon the stomach, powders, composed of one grain of sulphate of quinine and five of subcarbonate of iron, were substituted; the tincture of cimicifuga being administered as before. The bowels were kept regular with pills composed of aloes and blue mass. Local pains and restlessness were quieted with morphine. It may be well to remark here, that the last two items of direction were left, for three weeks, to the discretion of friends, and the laxative and the anodyne were given as the necessities of the case seemed to require. This treatment was continued for four or five days; the patient seeming to improve under its employment. I have neglected to state that the profuse sweating had continued up to this time without abatement. Sweating seemed more profuse during the night than throughout the day; but she sat up much during the day, while in the night evaporation was prevented by the bedclothes, and the difference was probably more seeming than real. The cimicifuga was still continued, and for the powders of quinine and iron, pills, composed each of one grain of sulphate of zinc and four of extract of hyoscyamus, were substituted. Zinc has, for some time, enjoyed no inconsiderable reputation in the treatment of chorea; and Dr. Theophilus Thompson, of London, in his "Clinical Lectures on Pulmonary Consumption," Dr. George H. Barlow, also of London, in his "Manual of the Practice of Medicine," and Dr. E. P. Coxe, Physician to the Charity Hospital, New Orleans, in a paper published in the *Boston Med. and Surg. Journ.*, April 8th, 1857, have strongly recommended a combination of zinc and hyoscyamus in the profuse night-sweats occurring in the last stages of consumption. Hence, it was with the hope of accomplishing a double purpose that zinc was ordered as above. This treatment was continued for five or six days; the patient continuing to improve. The choreic symptoms had nearly passed away, the strength and appetite had improved, and the patient was able to ride out, and also to walk about the yard. Simultaneous with the gradual improvement in the choreic symptoms, the paroxysmal local pains returned, and, although the general health was considerably improved, yet there was but slight decrease in the profuse sweating, and the local pains were nearly as severe as at first.

I now ordered two grains of strychnia in two ounces of water, with the addition of a few drops of diluted sulphuric acid. Twenty drops of this solution to be given every six hours; the use of the wine of colchicum and the Dover's powder, mentioned above, to be continued. This treatment was kept up for four or five days, at which time the local pains had nearly passed away, but the choreic symptoms had returned as severe as at any previous time. The same side as before was the seat of irregular muscular action; but now, in addition to the choreic symptoms, there seemed to be a partial hemiplegia. The face, on the side affected, was almost devoid of expression, and, in laughing, the mouth was drawn to the opposite side. I told her to grasp my finger with the affected hand, and in doing so she carried her hand to mine with that peculiar zig-zag motion so characteristic of chorea, but when once she had hold of my finger she grasped it with firmness. In view of this fact, which was deemed all-important, inasmuch as the mind was cheerful, although the patient was occasionally subject to paroxysms of weeping, and in view also of the well-known fact that partial palsy is not infrequent in chorea, I did not diagnose serious lesion of the brain. I now returned to the tincture of cimicifuga, the pills of zinc and extract of hyoscyamus, and, in addition, gave the ferrocyanuret of iron, in five-grain doses, every six hours.

This treatment was continued for four days, with some abatement of the choreic symptoms, though the partial paralytic condition remained unimproved. She walked about the house and the garden, leaning upon a friend; her appetite was quite good, and she rode out several times. At this time the tongue became suddenly and completely palsied; she could not project it, and all power of speech was lost; she seemed in other respects not worse; she would laugh at her own futile attempts at conversation, and would as often weep over her unfortunate affliction. As it was the right side which was affected, she could not converse with her friends in writing, and hence amused herself and took great pleasure in pointing to letters in the alphabet, forming words and sentences, thus expressing her thoughts and making known her wants and feelings.

The sweating had continued, with but little diminution, from the onset; the head was neither hot nor painful; there was no intolerance of light; the pulse was never hard nor irregular, and up to this time it had never fallen below ninety, nor risen above a hundred beats. During the progress of the case, the symptoms were not unlike such as might have arisen from chorea, complicated with hysteria; but having, perhaps, an unwarrantable confidence in my ability to diagnose the multiform manifestations of that disease, I could not avoid taking a more serious view of this case. The true pathological significance of the symptoms, however, to my understanding, was veiled with more or less of mystery, and encompassed with doubt.

Having but little confidence in the therapeutic powers of the ferrocyanuret of iron, it was discontinued, and, in view of the paralytic symptoms, the solution of strychnia was substituted; the other treatment remaining the same. This treatment was kept up, and the case progressed without much change for the next four days, when I was hastily summoned to the patient, and, on my arrival, found her in a state of coma or insensibility, from which she could not be aroused. The countenance, lips, and surface generally, were of a snowy whiteness; the pulse was more frequent, being 120, and was very feeble, but quite regular. The sweating, however, was not so copious; the breathing was slightly accelerated, but not labored. Liquids placed in the mouth were slowly swallowed, apparently without consciousness or difficulty. The pupils were not materially contracted nor dilated.

What was the cause of the coma, was a question not altogether easy of satisfactory solution. Had meningeal, or local cerebral inflammation been slowly and unobservedly progressing to a state of effusion? In view of all the symptoms, I was not fully prepared so to decide. Was the coma not rather owing to an insufficient supply, or rather to a supply of imperfect blood to the brain, resulting in a depression of the cerebral functions? I was rather inclined to the latter opinion; but must confess I was not firm in the conviction of its correctness, and, consequently, did not clearly see the indications of treatment.

As the bowels had not acted for two days, I gave five grains of calomel, and one-fourth of a grain of podophyllum, rubbed up with a little sugar. This combination was chosen partly on the account of the smallness of the dose, and because it could be dropped upon the tongue, from whence it could be readily washed down with any simple drink. A blister, two inches in width and ten inches in length, was applied over the cervical and upper portion of the dorsal vertebræ, and another of similar dimensions was applied across the chest in the infra-clavicular region. Watching the case closely for an hour, I finally concluded to pursue, for a time at least, a stimulating and tonic course. Be the pathological condition which gave rise to the cerebral symptoms what it might, it seemed evident, in view of all the symptoms, that death, which appeared imminent, could best be everted, at least temporarily, by a stimulating plan. Hence carbonate of ammonia and quinine, in diluted brandy, were ordered. On the following morning my friend, Dr. Axtell, saw the case with me. At this time there was more color to the countenance, and more force and fullness to the pulse. With much effort the patient could be aroused so as, apparently, to have a vague conception of what was said to her. The bowels had moved two or three times from the cathartic given the day previous. Dr. Axtell was of opinion that effusion, to some extent, had taken place in the cranial cavity, and hence that stimulants were contraindicated. The iodide of potassium, in two-grain doses, was ordered to be given every four hours, and, at the suggestion of Dr. Axtell, a small powder of hydrargyrum cum creta was ordered every eight hours, and a blister applied over the anterior surface of the neck. Without manifesting any improvement, the patient lingered for ten days longer, when she died. I have no minute record of the last ten days' treatment; suffice it to say, however, that the iodide of potassium and the counter-irritation were continued until death. From the onset of the coma until death, there was no irregular muscular action, either of a choreic or convulsive character. An opportunity for an autopsy was earnestly solicited, but was strenuously declined. After the patient's death, I learned one fact that may have had some connection with the origin of the disease. About two weeks previous to the commencement of the illness, she jumped from a fence, striking erect, and upon her feet. She immediately complained of having been hurt by the jump, and referred the seat of injury to the back of the neck. For four or five days she carried her head to one side, and suffered from pain in her head and back; but for ten days subsequently she was apparently well, or at least did not complain.

Was this a case of meningeal or local cerebral inflammation terminating in effusion upon, or within the brain? or was it, rather, a case of chorea occurring in a delicate female, terminating in death by anæmia or by inanition, and probably without apparent organic lesion of the brain? I confess to an inclination to the latter opinion, and although, in the absence of an autopsy, all opinions must be conjectural, I subjoin a few ideas in support of that opinion.

In the first place, the profuse sweating, with a cool skin, and without feverish excitement, was not indicative of inflammation; if not connected with anæmia as a cause, it certainly rapidly tended to that condition as an effect. The local pains were unaccompanied with heat, redness, or swelling, and, consequently, were not directly, and probably not indirectly, connected with an inflammatory condition.* The general cheerfulness, unattended with mental exaltation or depression, the regular pulse and natural pupil of the eye, were not symptoms generally present in inflammation affecting the brain or any of its appendages. The irregular muscular action was evidently choreic, and the coma, conjoined with a regular, but feeble pulse and a natural pupil, without any convulsive manifestations, did not argue strongly in favor of effusion.

A few thoughts in regard to the nature of chorea will, perhaps, place this case in a stronger light, and will not inappropriately conclude this paper. Many investigators have sought diligently for the lesion which determines choreic convulsions; but as death seldom takes place from the uncomplicated disease, the researches of pathological anatomists have been made under unfavorable circumstances. The cerebrum, cerebellum, and spinal cord have been repeatedly and thoroughly examined for the causative lesions upon which chorea depends Various changes have been observed, but so diversified in their character, and so manifestly connected with complications, as to justify the conclusion that they were unconnected with choreic symptoms. Hence the researches of the pathologist have thrown no light upon the nature of the disease under consideration. Physiologists have described a causative irritation, which, from its nature, must, perhaps, forever escape the vision of the anatomist; they have attempted to locate that irritation, but so far, I believe, without uniformity of result. The pathology of chorea has been the subject of much controversy; yet it is admitted by all that the primary irritation is in the nervous system; but whether in the brain or medulla spinalis, is a question upon which the controversy hinges. The late Dr. Marshall Hall was of the opinion that the primary irritation was seated in the spinal marrow; Dr. Robert B. Todd and others refer it to the brain itself. In the absence of post-mortem evidence, an opinion, in reference to the seat of the primary irritation, must be based upon the physiology of the nervous system, as productive of muscular motion, whether connected with or independent of volition. All voluntary movements, all acts of volition and sensation, receive their stimulus from the brain, and cannot take place without the agency of that organ. The involuntary movements do not of necessity involve sensation, and are performed without any participation of the will,—it may be in opposition to it; they are called forth by stimuli applied to the peripheral extremities of the afferent nerves, and reflected through the spinal cord.

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* This probability is based upon the supposition that local pains may occur in a rheumatic diathesis—pains which we call rheumatic—unaccompanied with rheumatic inflammation or fever.

Dr. Todd, in his "Lumleian Lectures" on the pathology and treatment of convulsive diseases, published in the *Medical Gazette*, 1849, says:—"The brain and spinal cord (and I beg to state that I use these terms to signify, respectively, the intra-cranial and intra-spinal nervous mass,) as the great centres of the nervous system—the great nervous battery of the body—show distinctly a division into two portions: one in which nerves are implanted; the other, which has no immediate connection with nerves, and communicates with them only through the medium of the former part." (Lecture II. p. 726.) Now, if I rightly understand Dr. Todd, in the extract given above, and we restrict the brain proper to that portion of the intra-cranial mass which has no connection with nerves, I can hardly see how the primary irritation in chorea can be referred to the brain itself. With Dr. Todd's views on the physiology of the nervous system and of muscular motion, which I have not the space here to illustrate, the arguments of Dr. Carpenter and others, in proof of the purely cerebral origin of chorea—namely, the peculiar connection of the disordered movements with emotional excitement, and their cessation during sleep—seem to me devoid of force. The jactitation and involuntary character of the convulsive movements, performed in opposition to the will, and but limitedly under its control, point to some portion of the automatic apparatus as the seat of the primary lesions in choreic convulsions. An able writer thus contradistinguishes the automative and cerebral actions:—"The sensorial ganglia, medulla oblongata, and spinal cord are the immediate instruments of all sensorial and motor changes; by their sole and independent action are produced all those movements which, being unprompted by the will, or even taking place in opposition to it, are said to be automatic. These automatic movements may be excited either by sensation or by impressions which do not necessarily affect the consciousness."

"On the other hand, the cerebrum is the instrument of purely mental operations, and has no direct connection with the external world. It receives all its stimuli to action through the sensorial ganglia; and it exerts all its influence upon the muscular system through the centres of automatic movement. Hence it may be said to be played upon by the sensorial portion of the automatic apparatus, and to play upon its motor portion. An *idea* with which a pleasurable or painful *feeling* is associated, may act emotionally (as we say) upon the automatic apparatus, without any voluntary direction, or even in opposition to it. The will may be exerted in antagonizing, strengthening, guiding, or controlling the automatic actions; but, in every case, the muscle directly receives its power from the automatic centre; and the very same movement may be automatic, emotional, or voluntary, according as the motor influence has been excited in the centre from which the nerve proceeded, by an external stimulus acting through an afferent nerve, or by an emotional impulse transmitted downward from the sensorial centres, or by a volition originating in the cerebrum." (*British and Foreign Medico-Chirurgical Review*, vol. v. pp. 17 and 18.) Admitting this view of the cerebral and automatic actions, and drawing the distinctions, as above, between the brain proper and the automatic apparatus, the chain of sensora ganglia, at the base of the brain, can only be regarded as the compliment of the spinal cord, in the formation of the automatic centre on which the cerebrum is superpoised.

Having, then, established the fact that choreic convulsions are excited by irritation, primarily within the automatic centre, or reflected to it from the peripheral extremities of afferent nerves, the next inquiry is, whether that irritation is seated within the spinal cord, medulla oblongata, or sensorial ganglia.

Choreic convulsions are occasionally followed by partial paralysis and hemiplegia; from this fact Dr. Todd argues that the seat of the irritation is intra-cranial, and above the decussation of the anterior pyramids. He locates the primary irritation in that portion of the *sensorial* ganglia which is most nearly connected with the plantation of the auditory and optic nerves. This opinion very nearly harmonizes with that expressed by Dr. Carpenter; and, though located within this complimental portion of the spinal cord, this topmost portion of the automatic centre,—the sensorial ganglia,—it is not within the spinal cord itself, as supposed by Dr. Marshall Hall. If additional arguments are wanting, aside from the one given, namely, the frequency of choreic hemiplegia, to prove that the primary irritation is not in the spinal cord, I may mention the frequent origination of chorea from mental causes, and also the cessation of the characteristic jactitatory movements under the influence of sleep. That the seat of irritation is not in the brain proper, derives additional confirmation from the fact that the consciousness is not affected even in the severest forms of the complaint. It may be thought that the case adduced militates against this last assertion; but it should be remembered that the coma was evidently the result of complications, and not the legitimate effect of choreic causative irritation.

Although physiologists have determined the seat of the primary irritation with a good degree of probability, yet we have no reason to expect that the pathological anatomist will ever find there, as a choreic cause, any serious organic lesions. In fact, it is next to certain that no such lesions exist. In tetanus, whether resulting from its own natural poison, or artificially induced by strychnine, there is a greater disturbance of the automatic centres than in chorea. In tetanus, unlike chorea, deaths frequently occur uncomplicated by other diseases. Yet in death resulting from tetanus, pathologists have so far failed to detect any evidences of organic lesion in the cerebro-spinal centres, and we have reasons for concluding that, if the severe tonic spasms of tetanus are independent of organic lesion, the milder jactitations of chorea are no less so.

What is the nature of this irritation, seated probably in some portion of the sensorial ganglia, and causative of chorea? It is said this affection may be produced by intestinal irritation, such as worms, constipation, vitiated secretions, etc.; by fright, cold, etc.; but is it not probable that a choreic idiosyncrasy or diathesis must previously exist?

Cold and catarrh are numbered among the causes of phthisis, but a tubercular diathesis must previously exist; the local disease is the result of a constitutional cause, involving the nutritive function, and stamping that function with its peculiar idiosyncrasy. Gout may succeed a debauch, but without the pre-existence of a gouty diathesis, tainting the circulatory system with its poisonous products, the debauch would prove inert, so far as the development of the painful local symptoms is concerned. Though choreic convulsions result from an irritation in the sensorial portion of the automatic apparatus, yet it is highly probable that this irritation is preceded by a constitutional affection—a choreic diathesis in some way involving the blood, resulting in depraved nutrition, and in a weakened and irritable condition of the automatic centres. Dr. Todd supports this view of the nature of chorea: upon this point he says "the disease is essentially one of depraved general nutrition." Dr. Simon says "chorea confines its attacks to individuals in whom the blood development is obviously defective."* (*Simon's Pathology*, p. 154.) Not only in chorea, but in all diseases where exaltation of function is evinced by the cerebro-spinal centres, as a primary nervous phenomenon, it is highly probable that the irritation in the automatic apparatus is caused by some influence of which the blood is the vehicle.

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* See a paper by the author in the Medical Examiner for 1856, p. 525.

To bring these remarks to bear upon the case reported, I would say that it is highly probable that the patient inherited, or had acquired, a choreic diathesis, which was ready to be developed into activity, on the application of any cause capable of acting directly, or by transmission, upon the sensorial ganglia. This idea derives some support from the fact that the patient once before had chorea, which continued for two or three months, and then subsided under treatment. The more immediate causes of the present attack were—first, an anæmic or chlorotic condition, giving rise to a weakened nutrition of the cerebro-spinal centres, with some degree of irritation which, Dr. Todd says, is the true nature of the cerebral affection in chorea; and, second, the injury done, and irritation developed at, or conveyed to the base of the brain, or rather, probably, to the sensorial ganglia, by the jump from the fence, as previously mentioned. As to the local pains, it is only necessary to remark that it has been thought by some that the choreic idiosyncrasy is identical with, or similar to the rheumatic diathesis. I believe that Drs. Addison and Todd favor this idea. I am not ignorant of the fact that Dr. Simon objects, but that objection is worthless, when we remember that he admits that a rheumatic diathesis is "capable of producing that irritation of the nervous centres which is characteristic of chorea." Neither am I ignorant of the fact that Dr. Simon says that "rheumatism and chorea are never coincident in their occurrence." Upon this point I wish simply to say that I do not desire to be understood as asserting that the local pains *were* positively rheumatic. The immense sudorous evacuations which accompanied the case, it is true, incline me to the opinion that such was their nature; yet every one knows that severe local pains and exhausting fluxes are no infrequent accompaniments of anæmia.

The colliquative diaphoresis, which continued in spite of treatment, served but to perpetuate and aggravate all the symptoms that had an anæmic cause.

The coma may have been the result of a depression of the cerebral functions, or effusion may have taken place upon the brain, or within its ventricles; but, if coma was the result of effusion, it is highly probable that that effusion was not the result of inflammation, but of an impoverished and watery condition of the blood. It is a well-known fact that flux and dropsy may result from anæmia as well as from plethora; from asthenic as well as from sthenic hyperæmia.

ART. II.—*Phenomena of the Capillary Circulation.* By AUSTIN FLINT, JR., M.D., of Buffalo, New York.

SINCE it has become the almost universally received doctrine that the vital processes of nutrition, and that most important modification of these processes, namely, inflammation, go on in the capillary system, and since we have been enabled, by the aid of the perfect microscopes which are now in such general use, to bring the phenomena of the capillary circulation immediately under our observation, this subject has acquired additional importance, and, with its physiological and pathological bearings, has met with much careful study and investigation. This was made the subject of an inaugural thesis at the Jefferson Medical College, 1857.* In the preparation of that paper, I emyloyed observations which I had made during the previous summer, nine of which (in the capillary circulation in the web of the frog) I carefully recorded. In making these observations, I found it most convenient to break up the medulla oblongata with a dissecting needle before attempting to view the circulation, as this rendered the frog perfectly manageable, and as it had no effect on the circulation, as shown by the experiments of M. Brown-Séquard, and as confirmed by myself. In addition to these experiments on the web, I observed the circulation in all other parts of the frog where it can be exhibited, especially in the lungs.† The appearances of the circulation in this situation are extremely beautiful; we can distinctly see the air-cells, surrounded by capillary vessels, through which the blood bounds with inconceivable rapidity. It is said by Dr. Willis, and confirmed by Wagner and Gluge, that the transparent plasma which we find occupying the space next the walls of the vessels in most situations, while the blood-disks occupy the centre, constituting the "still layer" of Kirkes, is not observed in this situation; in other words, the vessels are crowded to their very walls with corpuscles. For this remarkable deviation from a general law they offer no explanation.

I have never observed this peculiarity, as my attention was not directed to it while examining the pulmonary circulation. Those who believe that the heart exercises the sole power in the production of the circulation, would be entirely unable to account for this phenomenon; but holding as I do (and I shall more fully explain further on) that there is another very important agent in the production of circulation, namely, an attractive force resident in the tissues, which acts upon the blood, and which is allied to, or dependent upon, the vital processes of nutrition, it seems to me that it can be explained in the following manner: The blood circulating in the systemic capillaries nourishes the tissues by the liquor sanguinis, and then the attractive force acts upon this constituent, creating a tendency for the plasma to take its position next the walls of the vessels, thus forming the "still layer." But the pulmonary capillary circulation is for the *aeration* of the blood, a process which is effected in the globules, and not in the plasma; the great mass of blood is sent to the lungs for the purpose of aeration, not of nutrition; *hence the globules, which here feel the force of attraction for oxygen, occupy the space next the walls of the vessels.* Taking the view which I do of the causes of the capillary circulation, this explanation seems satisfactory.

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* The American Journal of Medical Sciences, July, 1857.

† For description of process of exhibiting the circulation in the lungs, see Art. in Am. Journal.

The appearances of the capillary circulation in the web of the frog's foot may be described in the following manner:—

When the web is subjected to examination, we have vessels of various sizes in the field, consisting of arterioles and venules, which are exceedingly variable in diameter, and the true capillaries, which are all of nearly equal diameters. The blood is seen coursing along the vessels with great rapidity, especially in the arterioles, where we may observe a slight pulsatory movement.

In the arterioles, as a general rule, the blood moves with unvarying rapidity, and here especially we notice a space next the walls of the vessels, which is not occupied by the red globules, but along which the colorless globules move at a diminished rate, appearing to have a tendency to adhere to the walls of the vessels, and sometimes even remaining stationary for a time, until they are pushed along again by the central mass. This space constitutes the still layer of Dr. Kirkes. The white or colorless corpuscles are much fewer than the red, and move at least ten or twelve times more slowly than the central mass. On careful examination, I have been able to remark a decided difference between the circulation in the arterioles and the venules. In the latter the movement is not so rapid, the globules appearing to be impelled more by a "*vis a tergo*," and to feel less the influence of the "*vis a fronte*," which seems to operate in the arterioles. The comparative number of the white corpuscles is greater, but the "still layer" appears to occupy a smaller proportion of the calibre of the vessel.

In the true capillaries the movements are less regular, and are apparently dependent, in a great measure, upon a force which acts directly upon them; the "capillary power," as it has been designated by Dr. Carpenter. This matter will be more fully touched upon presently, when we consider the causes of the capillary circulation. In the true capillaries, also, the blood moves in every possible direction, at different rates of speed, in different vessels, and also at different times in the same vessel. In one instance, I remarked a capillary branching from a vessel at an acute angle, (that is, turning almost directly opposite to the current in the main vessel,) with individual globules shooting through it with great rapidity. In many instances I have observed an entire stasis in one or two of the capillary vessels—existing, however, only for a moment, the circulation then recommencing with its original vigor. Dr. Carpenter has remarked a stasis followed by a current in an opposite direction.

It frequeutly happens that a globule is caught at the point of junction of two vessels, and remains stationary until carried along by the current of blood. Globules are frequently bent upon themselves as they pass from one vessel to another, but as soon as the cause is removed, they regain their original conformation. The walls of the vessel are motionless, and take no active part in the normal circulation, as was supposed by some of the older writers.

I have now given a description of the capillary circulation, as it appeared to me under the most favorable circumstances; more minute, perhaps, but not otherwise differing from the ordinary descriptions in works on physiology: and then naturally follows a consideration of the causes of the capillary circulation. I say *causes*, because I shall take the ground that it is not produced by a single cause, the heart's contraction, as was supposed by the great discoverer of the circulation. While it may be that the action of the heart is sufficient to propel the blood through the whole round of the circulation, as is contended by Magendie, by Dr. Allen Thompson, in the *Cyclopædia of Anatomy and Physiology*, by Dr. Kirkes, and others, I believe that there are other causes which operate, and which are able to carry on the function of circulation unassisted, as is shown by the acardiac fœtus of Dr. Houston, in a case reported in the *Dublin Medical Journal*, 1837, when, of course, the circulation was stopped at the birth of the child by the want of due aeration of the blood.*

What causes seem to operate in the production of the capillary circulation, judging merely from the appearances under the microscope? In the observations which I have recorded on this point, I have noted an irregularity of movement in the capillaries, both in different vessels at the same time, and in the same vessels at different times; the irregularity sometimes amounting to entire cessation of the circulation in a single vessel, followed by a current in an opposite direction; the shooting off of globules through vessels which were before empty; the darting off of globules through capillary branches with a velocity greater than that of the blood in the main vessel; and, in short, all the phenomena which are presented to the eye seem to indicate that there is an attractive force resident in the solid vital particles which operates on the blood in the capillaries.

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* In the American Journal, July, 1857, I went into a discussion of the views of some of our most eminent physiologists on this subject. In this article I shall confine myself merely to a statement of my own convictions, without discussing the opposed opinions.

We are not supposing the existence of a force, with the operation of which we are unacquainted. The present school of physiology teaches us that the processes of nutrition, of molecular disintegration, and of secretion, are dependent upon a vital force resident in the solid particles of the organism, which are essentially vitalized; and inflammation is now supposed to be due to a perversion of this force. In what other way could we explain the fact that every tissue takes from the mass of the arterial blood the substances which are required for its nutrition? The blood sent to the systemic capillaries by the heart is the same in all parts of the body; but when the great change which is effected in these vessels takes place, we find that the blood, which has thus been rendered venous, has not the same chemical constitution or the same appearance in all veins; for example, the blood of the emulgent vein is almost as florid as arterial blood.

The existence of a distinct capillary action is now believed by the highest authorities. Lehmann believes that a chemico-vital attraction of the blood for the tissue, together with the physical capillary attraction, produces the movement of the blood in the capillaries, and forces it into the veins. Dr. Carpenter believes that there exists a "capillary power" which is superadded to the force of the heart. Professor Dunglison teaches that there is an independent power resident in the tissues about the capillaries, and that, "by the united action of the heart, arteries, and capillaries, or intermediate system of vessels, the blood attains the veins." Even those who recognize the heart as the only efficient organ of the circulation, yield that the capillaries possess a "distributive force;" that is, though the circulation is effected by the unassisted action of the heart, yet the tissues have an attraction or affinity for the blood, which distributes it for the nutrition to each and every part of the body.

Taking into consideration everything which I have seen bearing on this subject, it seems to me to be clearly proved that the normal capillary circulation is dependent mainly upon the action of the heart and the "capillary power," or attractive force resident in the vital particles. It cannot be denied that the heart has a considerable share of the duty of capillary circulation. Taking into account the condition of the blood and vessels, apparently a slight force is capable of propelling the blood through the capillary system. When a small artery is divided, the force with which the blood is expelled is considerable, and appears sufficient to exert a decided effect upon the motion of the blood in the capillary system. It is impossible to estimate with much accuracy the proportional influence which the heart exerts in producing capillary circulation. The vital affinity between the tissues and the blood, which I suppose to be the other power concerned in this function, never ceases; still, as the action of the heart is often much interfered with, as in cases of excessive fatty degeneration, and as the heart has been removed from the frog, the capillary circulation nevertheless continuing, we cannot think that its power is greater than the attractive force, which I hold to be essentially concerned in the performance of that function. The extent of the heart's action is also variable, both in different individuals and in the same individual at different times.

The only other force which has any share in the production of capillary circulation, unless it be a slight suction force from the veins, is the "capillary power." This seems to me to play the more constant and effective part; when this ceases to act, the animal dies, and the blood refuses to circulate in spite of the efforts of the heart. This is the great vital force of nutrition which is constantly operating, and which is so wonderful and inexplicable. We know that there is such a force, and that it continually acts, but what it is, or what is its essential character, is beyond the wisdom of man to explain It is the life which was breathed into man at his creation, and which is as wonderful and inexplicable now as ever.

Lastly, the following inquiry suggests itself:—What conditions are necessary to the healthy performance of the capillary circulation?

We can answer; in the first place, a healthy condition of the vital particles, which is produced by healthy nutrition; and, in the second place, a particular condition of the blood, which is effected by respiration.

No arguments appear to be necessary to prove the first statement, but I have made experiments, which I shall proceed to describe, which conclusively establish the second point.

The following experiment, made by Dr. J. Reid, and reported in the *Edinburgh Med. and Surg. Journal*, April, 1841, is quoted by Dr. Carpenter:—

Dr. Reid found that when the ingress of air through the trachea of a dog was prevented, and the asphyxia was proceeding to the stage of insensibility, the pressure in the femoral artery, indicated by the hæmadynamometer, was much greater than usual. Upon applying a similar test to a vein, the pressure was proportionally diminished, whence it became apparent that there was an unusual obstruction to the passage of the venous blood (the blood being venous in the arteries) in the systemic capillaries.

Before seeing an account of this experiment, I made the following observations with reference to the same point, carefully recording them:—

Observation First.—The medulla of a middle-sized frog was broken up, and the web submitted to microscopic examination. The frog was bathed in sulphuric ether, (care being taken to allow none to touch the web under examination,) and the circulation watched for ten minutes No effect could be discovered. The object of this experiment was to determine whether the phenomena in the succeeding experiment were in any degree dependent upon the other, which was conducted in collodion. The frog was then painted over with an impermeable coating of collodion, care being taken, as before, not to touch the web. The effect on the circulation was immediate. It instantly became less rapid, until, at the expiration of twenty minutes, it had entirely ceased. The smaller vessels were the first to become affected, the larger arterials resisting its action longest. One of the first effects was a pulsative movement in the vessels where the blood had previously flowed in a continuous stream, showing *that the attractive force is lost, but the heart's action is still felt.* The fact of the first arrest of the blood in the capillaries, seems to indicate that it is now unfit to supply the wants of the tissues, and therefore the attractive force ceases to be operative. The arrest of the circulation was steady, and at the expiration of twenty minutes the motion had entirely ceased. The entire coating of collodion was now instantly peeled off, and the effect on the circulation was instantaneous. Quite a rapid circulation immediately commenced, but it soon began to decline, and in twenty minutes had almost ceased. The heart was now exposed, and found contracting regularly. In making this experiment, *all respiration* was abolished; the breaking up of the medulla oblongata destroying the pulmonary, and the impervious coating, applied to the entire surface, destroying the cutaneous respiration.

Observation Second.—I painted a frog with a thick coating of collodion without breaking up the medulla. It struggled vigorously at first, but soon became quiet, and the web was put under the microscope.

The circulation was affected in the same manner as in the preceding observation, and entirely ceased in twenty-five minutes. During the first few minutes the nostrils dilated and contracted rapidly, but soon became motionless, care having been taken not to obstruct them with collodion, though it was applied effectually to all other parts excepting the web under observation.

The experiment of Dr. Reid proves the fact, inferentially, that blood deprived of oxygen, as in asphyxia, is retarded in the systemic capillaries; but the experiments just related bring the processes directly under the eye, and we can see clearly that when the blood is not aerated, though the heart continues to contract, it will not circulate, and that the situation in which it is retarded is in the capillary system. My second experiment demonstrated the comparatively small part which the lungs of the frog take in respiration; the blood circulating in the frog in which the cutaneous respiration alone was abolished, and the pulmonary respiration not interfered with, but five minutes longer than in the experiment, when both kinds of respiration were abolished. Capillary circulation will go on after tying the trachea, the blood being sufficiently aerated by means of the skin.

Thus it is experimentally proved that an oxygenated state of the blood is an indispensable condition for its circulation through the capillaries; and when the process of respiration or aeration of the blood is abolished, the blood cannot circulate. This we know to be the fact, but we demonstrate by the preceding experiments that in asphyxia the impediment to the circulation exists in the capillaries; that the condition of oxygenation is necessary to the performance of the vital functions, and, it may be, that the entire want of capillary power throws all the onus on the heart, which organ is insufficient for the labor thus imposed upon it. In one of my experiments, after the capillary circulation had entirely ceased, the thorax was opened, and the heart found beating regularly.

Art. III.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the Secretary.

Wednesday Evening, June 9th, 1858.

The President, Dr. Gross, in the chair.

Dilatation of Heart, with Adherence of the Pericardium; Deposits of Lymph in the Liver; Solidification of the Lung; Disease of the Kidney.—Dr. Darrach presented a diseased liver, heart, and lung; they were removed from Mr. B., aged nineteen years, who had, when about six years of age, a very severe attack of scarlet fever, which left him much prostrated. His attending physician stated that anasarca had been present. The urine was not examined; most likely his kidneys, at the time, were affected. The patient, however, recovered; but it was not a great while afterwards before he exhibited evident signs of disease of the heart. Since, he has been feeble, and, up to the occurrence of death, has suffered more or less severely from a cardiac affection, yet having sometimes rather prolonged intervals of comparative health.

During his last attack he suffered very much; his lower limbs became exceedingly swollen, so that the skin on his feet burst in several places. There was extended and marked dullness over the heart. No abnormal sounds could be distinguished. The impulse of the heart was diffused and fluttering, but without force of beat. The sounds were not marked nor distant, from which signs the conclusion was, that there existed dilatation of the heart without valvular disease. Posteriorly, mucous and sub-crepitant rales could be heard in the lungs. There was also great dullness on the right side, but no blowing sound could be perceived. The general appearance of the patient was that of one laboring under disease of heart, or albuminuria. The urine was examined a short time before death, and a large amount of albumen was found in it.

Sectio cadaveris.—The cranium was not opened. The lungs were found adherent, throughout their whole extent of surface, to the walls of the chest. The pericardium was in the same condition. Posteriorly, the lower half of both lungs were solidified. The heart was found dilated; its walls not thicker than normal. The pericardial sac was entirely obliterated by the adherence of its approximate surfaces. The mitral valves, and semilunar valves of the aorta were very slightly thickened, but not by any means insufficient. There were extensive washed clots in all the cavities, and at the commencement of the larger vessels.

Abdominal region.—The liver was enlarged, and very firm and elastic to the touch. A cut surface presented brownish yellow and black markings, somewhat resembling a nutmeg liver. The kidneys were larger than normal; the left one was evidently in an early stage of degeneration, being of a yellow hue, which contrasted strongly with the healthy appearance of the other renal organ.

At first sight one was struck with the oily appearance of the yellow portions of the liver; but the color was more of a brownish hue than is occasioned by an oily deposit in that organ; and when, by a microscopical examination, no cells containing oil, nor any free oil globules were found, but, on the contrary, cells less than usually granular, and also much free granular matter, the conclusion that suggested itself, both from the above as well as from the appearance of the organ to the naked eye and its firm, elastic feel, was, that it was not really in a state of fibroid degeneration, but that unorganized lymph had been deposited in the organ, about the capsule of Glisson—perhaps, if the person had lived, to be formed into fibroid cells, but as yet none had made their appearance, or at least could be discovered.

The deposit which produced the solidification of the lungs, no doubt was of the same nature; and the same condition was, likely, commencing in the kidney; a universal lymph deposit having taken place from some fault in nutrition.

Ulcers on the Tongue, Larynx, and in the Bronchial Tubes; Tubercle in the Lungs and Kidney.—DR. MORTON presented, for Dr. Hutchinson, a tongue and larynx covered with numerous ulcerations, also tubercular lungs and kidneys. These specimens were removed from C. N., aged twenty-three, a native of Germany, who was admitted into the Pennsylvania Hospital on June 3d, for syphilis, and who died suddenly from œdema of the glottis, on Monday morning, June 7th. When admitted, he was in a state of great debility; his eyes were the seat of a severe inflammation, and he had a very haggard expression; he suffered from diarrhœa; his face was covered with an eruption resembling rupia, which was also found upon other parts of his body; his tongue and palate were horribly ulcerated. It was afterwards ascertained from his physician, Dr. Demmé, that during the winter of 1857 he had contracted a chancre, which soon became indurated. On the 14th of April, of this year, Dr. Demmé describes him as presenting an extremely emaciated appearance, and complaining of soreness in his eyes, a frontal headache, of an uneasiness in the throat, and of a profuse and fetid muco-purulent and bloody discharge from the nose. An examination showed in one nostril, upon the septum, a deep, excavated ulcer, with well-defined edges, at the bottom of which the vomer was exposed, denuded of its periosteum. The course at that time adopted was a mercurial treatment, and injections into the nose of a solution of chlorate of potassa; subsequently he was placed upon the iodide of potassium in five-grain doses. About the 4th of May his eyes became very much inflamed, his appetite failed much, his breath was foul, and he complained of great uneasiness at the throat; but the disease in the nose he declared to be cured. Iron and bark did not remedy the progressing debility, nor did any applications stay, excepting temporarily, the disease in the throat. His eyes, after having greatly amended, became again suddenly much worse, presenting most characteristically the appearance of scrofulous conjunctivitis and corneitis. The lungs, which were at that time examined, sounded clear on percussion. There was no cough, nor were there any symptoms which pointed to the liver or kidney. Toward the middle of the month, rupia-like ulcers appeared upon the skin, and on the mucous membrane of the mouth and tongue, and an exhausting diarrhœa set in. It was in this state that he was carried to the Pennsylvania Hospital.

Post-mortem examination eight hours after death.—The tongue was one mass of distinct ulcers from end to end; the entire top of the organ was eaten away. Some of these ulcers appeared, on close inspection, to be situated on the surface of an exuded whitish matter, or a degenerated substance, and not directly on the tissue of the tongue itself. They extended, forming a continuous line, through the larynx into the smaller bronchial tubes. The tip of the epiglottis was destroyed, and also the vocal chords; the lungs were filled with infiltrated tubercle; tubercular ulcers were situated throughout the small intestine; the kidneys had large patches of infiltrated tubercle scattered throughout their structure. The cortical and the tubular tissues had, in parts, entirely disappeared. In the left testicle was a small softened spot, which had the appearance of a commencing abscess.

Dr. Morton directed the attention of the Society to this case as combining lesions produced by syphilis, with tubercular disease of several organs. It was difficult to say which of the ulcerations were produced by syphilis. The ulcers on the tongue and larynx might be syphilitic or tubercular.

Dr. Gross inquired if the ulcers on the tongue had an indurated base.

Dr. Morton stated that it had seemed to him as if the tissue around the ulcerations was dense and hard.

Dr. Brinton asked if the glands of the neck were indurated.

Dr. Morton had not perceived them to be.

Dr. Keller thought it a difficult matter to determine whether syphilis had preceded or followed the tubercular deposits. From examining the specimens on the table, he was inclined to believe that the tubercular matter had been deposited in the different organs at different times. The disease of the kidney was evidently much older than that of the lungs.

Perforation of the Aortic Valves.—Dr. Mitchell presented, for Dr. Darby, a specimen of disease of the aortic valves, with Dr. Darby's account of the case. The patient from whom it was obtained, Thomas Darley, a boatman, thirty-five years of age, was admitted, on Thursday, May, 21st, into the St. Joseph's Hospital, exhibiting signs of great suffering and debility. His face was pale; his lips were colorless; his eyes heavy; the extremities cold and clammy; his forehead was covered with large drops of sweat, and his hair as moist as if he had been under a shower-bath. While making arrangements for entering him as a patient, he complained of so much weakness and nausea that half an ounce of brandy was administered, and he had to be assisted into the ward and undressed by an assistant. On being placed in bed, he immediately vomited about six ounces of fluid, resembling coffee grounds, covered with froth, and of a sour, fetid odor. In the ejection of this fluid he suffered intense pain, and complained of great burning in the region of his stomach. Being for the time unable to answer questions, he gave, after a period of several minutes, a rather disconnected history of his case. He had been quite suddenly taken sick on the Friday previous, with great weakness, much nausea and pain in the epigastric region; he did not think it would last, and went on board the boat in New York, but found, on the first day of the passage, all symptoms increasing, so much so that he could not do duty; and, on going to bed, was unable to lie on his left side. His bowels at first were loose, and a cough soon commenced, which produced great pain over the whole of the hypochondriac and epigastric regions and left side of the thorax; he expectorated thick, white, frothy sputa, without any discoloration. He had been unable to eat anything since he was taken sick, on account of constant vomiting, but he drank a great deal of water, as it cooled the burning in his stomach. From intense pain in coughing or drawing a long breath, he had not slept since the attack; no medicine had been taken; but to relieve pain he had placed a tar plaster over the region of his stomach.

On examination, his pulse was found threadlike, and beating 104 in the minute; his tongue was dry and thickly coated, and his whole abdomen was tympanitic; the stomach was much distended, felt hard, and was exquisitely painful to the touch; there was much dullness, on percussion, on the left side of the chest, particularly over the region filled by the posterior lobe of the left lung, and on the left side the respiratory murmur could only be heard beneath the clavicle. On the right side the respiration was puerile. His heart palpitated violently, and a bellows murmur could be heard over the aortic valves, and as high as the arch of the aorta; his breath was so fetid as to render it unpleasant to remain near him; his cough was harsh, dry, and frequent, causing great pain during the paroxysms, which were of some length.

From this time the patient lingered for two days, suffering from symptoms of gastritis, and annoyed by vomiting and great oppression of breathing. The vomited matters were composed of mucus, bile, and altered blood; his pulse ranged between 90 and 100. Death took place suddenly, about twenty-four hours after his admission, and while he was in the act of turning over.

Post-mortem examination eighteen hours after death.—The heart was much enlarged, and the auricles were relatively more dilated than the ventricles. The only valves found diseased were those of the aorta; the edges of two of the discs of these valves were much thickened, and the valves were pierced by three perforations; the muscular structure of the right auricle was separated in longitudinal sections, as if cut by a knife, and was only held together by connective tissue. There was no actual perforation of the auricle, for no blood was found in the pericardium; yet it was so thin as to present the appearance of being ruptured; and not until the auricle was distended, by water being poured into it, was the fact proved otherwise. There were two quarts of watery effusion in the cavity of the thorax, compressing the left lung to one-third the natural size. In other respects the lungs appeared healthy. The stomach was filled with a dark and fetid fluid, and the structure was much changed, being emphysematous when rubbed between the fingers. The mucous membrane was elevated, decomposed in parts, and much inflamed in the middle portion, the inflammation extending toward the pyloric orifice. This inflamed portion was traversed by enlarged vessels, and in other parts of the stomach dark-greenish colored spots were seen. The liver was decreased in size, and such considerable force was required in tearing it, or pushing the fingers through its structure, as to induce the opinion that there was cirrhosis. The other viscera presented no abnormal appearances.

WEDNESDAY EVENING, June 23d, 1858.

The President, DR. GROSS, in the Chair.

Syphilitic Ulceration of the Larynx.—DR. HALL exhibited a specimen of syphilitic ulceration of the larynx. It was obtained from an Irish woman, unmarried, aged thirty-six, of robust frame, but of a worn, slightly haggard expression, who was admitted into the medical ward of the Pennsylvania Hospital, August 31st, 1857, for laryngitis, under the care of Dr. Gerhard. The most prominent symptom, and one that directed attention immediately to the site of the disease, was the harsh, stridulous respiration. Her pulse was good, and there was none of that purplish appearance about the face to indicate much obstruction to the circulation in the lungs. Percussion revealed no dullness; over the front and back portions of the chest there were merely some few bronchitic rales to be heard.

Owing to her dyspnœa and apparent reluctance to answer questions, not much information could be obtained from her, beyond the fact that she had been sick for four weeks—the result of a cold she had taken. With a view of promoting diaphoresis and relaxation, vin. ipecac. in syr. scilla was ordered every two hours. She was placed upon a good supporting diet, with beef essence and broth.

At the evening visit, the dyspnœa still continuing, calomel, half a grain, and nitrate of potassa, ten grains, every two hours, were ordered. A blister, two inches square, was applied over the throat.

At midnight she was breathing very much better; there was very little stridor; she was sleeping, and seemed to be much improved.

At 4 A.M., of September 1st, Dr. Hall was aroused in haste, but, on reaching the bedside, found that the patient was dead.

Examination ten hours after death.—Head, nothing abnormal. Lungs and heart perfectly healthy. The liver, stomach, spleen, kidneys, bladder, and intestines, also healthy. The right labium externum was the seat of two excavated chancres with indurated bases.

The immediate cause of death had been œdema of the glottis and of the rima glottidis. In the larynx were two ulcers, each the size of a ten-cent piece; one just below the upper border of the thyroid cartilage in the median line, superficial in character; the other, situated over the cricoid cartilage on the left side, extended deeply, and had produced corrosion of the cartilage, and formed an abscess external to the larynx in size, of two and a half inches by two inches in breadth. The walls of the abscess were much thickened, and contained a small quantity of thin, fetid pus.

This case is one of interest, from the nature of the affection, and from the light thrown upon it by the post-mortem examination. The ulceration of the larynx might be mistaken for tubercular deposit; the absence of tubercle in the lungs and other organs, together with the inflammation and destruction of the cartilages of the larynx, went to disprove this—the presence of the chancres on the labia forming conclusive testimony as to the character of the ulceration in the throat.

Langston Parker calls it one of the most formidable varieties of constitutional syphilis, and says that he has seen several examples of it. Ricord, Cazenave, and Carmichael, of Dublin, have reported others. Hasse says that the cricoid cartilage is the one principally affected. He also speaks of the purulent cyst, external or internal, to the larynx or trachea; both of which observations are verified in the specimen presented to the notice of the Society.

When a student of Prof. Pancoast, Dr. Hall continued: I saw a case of this disease, in which the man was almost moribund; but, upon tracheotomy being performed, the patient rallied, and, after a doubtful period of successive improvements and relapses, recovered his health, although with the loss of a portion of the laryngeal cartilages.

In this case just reported, tracheotomy would also have been performed, had the patient not sank so rapidly.

Chronic Abscess of the Brain.—DR. GROSS exhibited a specimen of abscess of the brain sent to him by Dr. W. M. King, one of the resident physicians of St. Joseph's Hospital of this city. The patient was an Englishman, twenty-one years of age, and was admitted on the 8th of November, 1857. He had been a flax-dresser, and consequently led a sedentary life. A short time ago he had emigrated to this country, and during the voyage he had suffered much from the want of the necessaries of life. Soon after his arrival he had repeated epileptic attacks, followed by hemiplegia of the right side, which, however, retained its sensibility. His pulse was small, only forty-five beats a minute; pupils acted readily under the influence of light; the tongue was black; the stomach irritable; and bowels costive. The speech was slow and rather difficult, and he complained of pain through the temples. The treatment consisted in regulating the bowels, applying cold to the head, and administering iodide of potassium and mercury. This course was continued until the 12th of December, when he was able, with the aid of a crutch, to hobble around his room. His appetite had greatly improved, and his pulse had averaged about fifty beats a minute. His articulation, however, was rather worse, and his right arm was perfectly useless. From this time he grew gradually worse; he suffered from constant irritability of the stomach, and, at the end of a week, he had several violent epileptic convulsions. The attack came on in the following manner:—He would fall back apparently lifeless; his extremities were stiff, and he foamed slightly at the mouth; his respiration was feeble, and his pulse was beating at the rate of forty-five a minute. After remaining in this condition about fifteen minutes, he would draw several deep respirations, and gradually revive; but in a few moments another convulsion, more violent than the preceding one, and of much longer duration, would take place. On the 26th of December his appetite still continued good, although he could retain nothing on his stomach; he slept well, but when he awoke was in a stupid condition, with his eyes partially closed. He had ceased to complain of the headache, which had been so troublesome. In a few days he had almost entirely lost the power of deglutition, and, upon assuming the semi-erect posture, he fainted. On the 5th of January the patient had several convulsions, and died quietly early the following morning. On dissection, the brain seemed to be atrophied, and so much softened that a stream of water, when allowed to fall upon it from a slight height, washed away a considerable portion of its substance. In the interior of the left hemisphere there was a large abscess containing about two ounces of fetid pus, and lined by a thick secreting membrane.

Cancer of the Fundus and Body of the Uterus Perforating the Rectum.—This specimen, presented by DR. HARRIS, was obtained from the body of a married lady, aged fifty-four years, who was affected with cancerous disease (dating from the time when the first symptom of uterine disturbance made its appearance) for about four years and three months. In early life, and up to the period when the disease commenced, she was remarkably healthy, and for some years anterior to the cessation of her menses, had been of very full habit. At the age of forty-eight she ceased to menstruate, and no bloody discharge came from the uterus during the two succeeding years. A sanguine fluid then commenced to escape from the vagina in small quantity, and this discharge continued without intermission, until the disease was so far advanced that the nature of the fluid became changed by admixture with broken-down cancerous tissue and purulent secretion.

For about two years and five months there was no pain attendant upon the disease; the patient very slowly lost flesh, which was not much remarked by her friends, who supposed it to be due to the effects of age, as she made no complaints of ill health, and called in no medical advice. The first severe pain experienced came on immediately after taking a cold plunge bath; it was felt in the iliac regions, and was of a lancinating character. From this time until a few weeks anterior to death, a period of about twenty-one months, this pain returned daily with a gradually increasing severity, until in a few months it became excruciating, and required a constant resort to anodynes to relieve it. For a long time it returned at a regular hour each day or night; it was occasionally much less acute for a day or two, and sometimes for several days was reduced to a form much more readily to be endured; after which the lancinating character of the paroxysms would return.

Medical advice was first called in about twenty months before death; at which time there was a constant oozing of blood from the uterus, though small in quantity, and a daily paroxysm of pain, as yet not very severe. There was no tenderness of the abdomen upon pressure, the patient being in the habit of forcibly compressing the abdominal walls, and striking herself in the iliac region for the purpose of alleviating her sufferings; and no tumor could be distinguished by the most careful palpation. A vaginal examination, either by the touch or speculum, was not permitted, so that the diagnosis had to be made from the two symptoms mentioned: viz., lancinating, paroxysmal pain, and constant menorrhagia, taken in connection with the fact that the parents of the patient had died of cancerous disease. The malady was pronounced cancer of the uterus, and treated as such.

After being under medical treatment a little more than a year, the patient, by much persuasion, was brought to submit to a per vaginam examination. The uterus was then found enlarged, and its cervix very hard to the touch, but smooth upon its vaginal surface; the whole organ, judging from the size of the neck, was thought to be quadruple its natural dimensions, which could be more readily determined, as the patient had never borne children.

Seven or eight months before death the discharges from the vagina became slightly changed in character, purulent matter being mixed with the bloody fluid, and pus was soon afterwards found in the excrementitious matters from the rectum. The purulent matter escaping from the vagina gradually increased, and became fetid, though seldom so offensive as not to admit of the odor being corrected by the use of chloride of lime or other disinfecting agents.

About four months before death, fecal matter commenced to pass by the vagina, and toward the latter period of life, nearly the whole of the excrement passed through this channel. Frequent urination became necessary to the comfort of the patient, owing to the pressure of the enlarged uterus upon the bladder preventing its distention, though the act was not always readily performed, for upon two occasions it was attended with very severe pain; the fluid was retained for a considerable time. On the last of these occasions (nine weeks before death) the urine was not passed for twenty-four hours, and the distended bladder, by pressing upon the uterus, produced an alarming hemorrhage, after the occurrence of which, a voluntary evacuation took place.

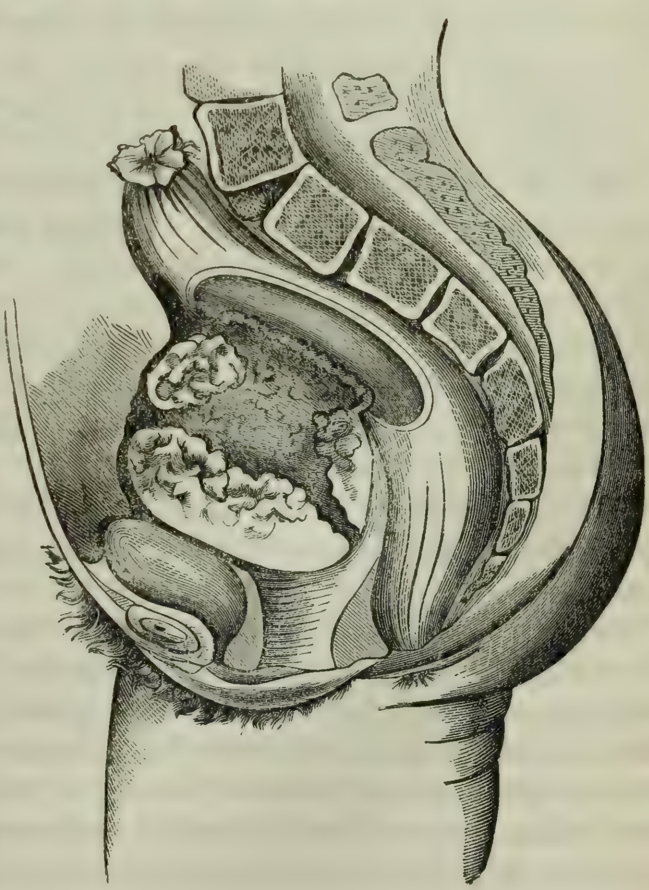
Defecation was painful and exhausting during the latter months of existence. Before perforation of the rectum took place the bowels were generally costive,—four days to a week sometimes elapsing without a passage. No diarrhœa ever occurred except upon one occasion, when it was owing to the patient, unknown to the medical attendant, taking an active cathartic; the attack lasted two days.

During the nine weeks subsequent to the attack of hemorrhage, the patient remained continually in bed; suffered much less pain than formerly, except an occasional paroxysm; lived almost exclusively upon milk-punch; passed large quantities of puriform matter, mixed with fæces, from the vagina; and was troubled much with nausea, and, when she attempted to take any solid food, with vomiting. During the last few days she suffered but little, and died finally from exhaustion.

Autopsy, made sixty hours after death.—Body much emaciated, considering the size of the patient when in full health; but not so much reduced in the extremities, particularly the lower, as is often found in subjects that have died of cancerous affections. The trunk was very thin, and the abdominal parietes flattened, but the opposed portions of the thighs, at their upper portion, still retained a considerable adipose deposit, the skin covering which was red and excoriated from the vaginal discharges. The abdominal walls contained but little fat, and were so much contracted that scarcely any trace of the umbilicus could be discovered. When the abdominal cavity was laid open, the omentum was found to be joined to the fundus of the uterus; and in front of this adhesion the cavity of the womb communicated with the cavity of the abdomen by an irregular aperture, with very soft and rotten edges. In drawing up the omentum to examine more minutely the extent of the adhesion, the adherent portion of the uterus was detached from the remainder of the organ, thus enlarging the opening in the fundus. The body of the omentum presented no abnormal condition, except that it was somewhat more dense and thick than it is usually found. The caput coli was also joined to the uterus, and the vermiform appendage was united by a deposit of lymph to the side of the colon, and was also involved in the connection with the uterus. The large intestine, except the adherent portion, was found healthy from this point to the commencement of the rectum, where were discovered two oval gangrenous perforations near to each other; one large enough to admit the end of the forefinger, the other of smaller dimensions. The liver had undergone fatty degeneration, presenting the most perfect example of this pathological condition I have ever met with. It was very light in color, solid, greased the knife used in cutting into it, and under the microscope showed very large fat-cells. The spleen had undergone no change. The stomach contained between one and two ounces of brownish-yellow bile, and its mucous membrane was much stained by this fluid, but the organ was unaltered by disease. The kidneys were imbedded in fat, and contained adipose deposits in their calyces, but the tissue proper was unaffected. The small intestine and mesenteric glands were healthy.

The uterus was found to be the main seat of disease. It entirely filled the pelvis, with the exception of the space occupied by the contracted rectum and bladder; its fundus was on a level with the superior strait, which accounted for its not having been felt during life. The rectum was more in the median line than usual, and the sigmoid flexure more to the right side. The whole of the pelvic contents were dissected out in mass, and a more minute examination revealed the following:—The ovaries were cancerous, but not larger than natural; the uterus had undergone cancerous degeneration; the os was oval, soft, patulous, and readily admitted the thumb; the cervix was short, very

FIG. 6.



much developed laterally, and had lost its scirrhous condition; the cavity of the neck and body of the organ was greatly enlarged, being capable of containing four or five ounces of fluid, and was filled with a pultaceous mass, composed of broken-down cancerous tissue and fecal matter; the posterior wall of the body of the uterus was united to the anterior of the rectum, and the cavities of the two viscera, communicated by an ulcerated opening an inch wide and three inches long; the non-adherent portion of the rectum was contracted, most probably from want of use, as it was not diseased; the vaginal surface of the cervix was not diseased, and there was no protrusion of fungus through the os; the vagina was found much shorter than natural, and dilated at its uterine extremity to more than two inches in diameter—no cancerous disease existed in its mucous lining. The bladder was united to the anterior wall of the uterus, and was contracted, but the disease had not extended entirely through its walls.

The abdominal cavity contained no effused fluid, pus, or fæces; and, besides the points of adhesion mentioned, there was no other sign of local peritonitis. The perforation at the fundus of the uterus must have been very recent, and most probably occurred after death, by the decomposition of the part, which was very thin and soft,—an event which was favored by the fact that the body was not placed under the preservative influence of ice until twenty-four hours after death. The utero-rectal communication must have existed for at least six months, for as early as that, purulent matter escaped through the rectum.

The soft cancerous matter contained in the cavity of the uterus, when examined under the microscope, exhibited broken-down cells, having nothing characteristic of cancerous disease. The cancer tissue proper was of a medullary character, and easily broke down under pressure; the microscope revealed in it an abundance of oval cancer-cells, with nuclei and nucleoli. This cancer tissue appeared to the naked eye to be infiltrated in the tissue proper of the uterus, constituting a form of disease known as *Infiltrated Medullary Carcinoma.*

This case presents several points of interest which are worthy of our attention, as bearing upon the anticipation and recognition of internal cancers.

1st. The patient was an example of that remarkable robust health so commonly enjoyed by those in whom there exists a strong hereditary predisposition to cancerous disease. Both parents and a half-sister having fallen victims to cancer, her healthy appearance was an additional reason for the anticipation of the same disease; and the first symptoms of uterine disturbance, under such circumstances, would naturally lead to a suspicion of cancer, and greatly assist in making a prognosis of the case.

2d. The medical history of the family of the patient goes to show that cancerous parents are very apt to transmit cancer to their children, but that the seat of the disease in the latter is less influenced by the former than its nature. In the father the disease was seated in the cervical glands; in the mother in the mammæ; in one daughter by a former wife, and in the case here reported, in the uterus. The cervix uteri is the most common seat of cancer, and where there is an hereditary predisposition in a female, this point is most apt to be attacked, no matter what be the seat of disease in the parents. In some rare instances, however, we meet with cases where not only is the disease the same in form, but it occupies the same situation (though an unusual one) as it occupied in the parent. In a patient under my care in 1848, a cancer as large as a small orange occupied the extremity of the nose; the father of the woman died of the same disease, similarly situated. This woman was also remarkably robust previous to the commencement of the disease.

3d. The entire freedom from abdominal tenderness that existed, detracts from the reliability of this symptom as an evidence of the existence of cancer of the uterus.

4th. The inability to detect by palpation the presence of cancer of the body of the uterus, is no evidence that it does not exist, as the prolapsed condition of the womb may render its being felt impossible, even in an emaciated subject.

5th. The absence of pain in the early stages of uterine cancer may readily mislead us in making a diagnosis, where a per vaginam examination cannot be obtained, as menorrhagia may arise from a variety of causes other than the existence of scirrhus. Where there is an evident predisposition to the disease, the return of the menstrual discharge after a long period of cessation is to be regarded as a dangerous symptom, and particularly in those who have previously enjoyed vigorous health.

The specimen of disease before us exhibits what it is rare to find in uterine carcinoma, *i.e.* extensive disorganization, without ulceration of the cervix and vagina. The primary seat of the malady, instead therefore of being the neck, which is almost universal, must have been the body of the uterus, and, judging by the ulceration, that portion of it contiguous to the rectum. The total destruction of the neck of the uterus, upper portion of the vagina, and contiguous walls of the rectum and bladder, is much more common to be met with than perforation of the rectum or bladder, without ulcerative destruction of the cervix. In this, as well as in all the cases of cancer of the abdominal or pelvic viscera I have examined, there were no signs of general peritonitis manifested during life, or found after death. Cancerous union of viscera it is common to meet with, and this is in all probability preceded by a subacute local peritonitis; but general peritoneal inflammation is rare in cancers of the abdominal or pelvic organs, particularly where the uterus is the seat of disease. Another marked feature in uterine cancer is, that with the exception of contiguous viscera, which are diseased by extension from the primary seat, cancer is rarely found in other organs, not even in the mammæ, with which there is such a marked sympathetic connection. Occasionally, in cases of long duration, a deposition of cancerous matter takes place in organs not contiguous. The liver, lungs, and glands of the groin are most apt to be thus affected.

Dr. Gross would ask whether Dr. Harris did not think that the rectum and uterus had become simultaneously affected? There was evidently much disease of the rectum; and it seemed to him not improbable that it had become cancerous at the same time, or shortly after the uterus, and was not simply an extension of the disease of one organ to another.

Dr. Harris believed the case to have been a primary cancer of the uterus extending to the rectum. There were no signs of disturbance of the intestine until the last year of life, while long anterior to this, signs of a morbid state of the uterus existed.

Dr. Woodward directed attention to the fatty degeneration which had here existed. He felt persuaded that in cancerous formations, fatty degeneration of organs, not themselves affected with cancer, very frequently occurred; indeed, almost as frequently as in tubercle. He had especially noticed this in the liver and heart. He also alluded to some recent observers, who had stated that, in malignant growths of the uterus, the muscular fibres increased. He would ask whether this had been noticed in the specimen just described?

Dr. Harris answered, that in the parts examined by him with the microscope no fibres of any kind were perceived; but he had not specially examined those portions of the cancerous mass which stretched into what appeared to be the still healthy structure of the uterus.

Cysts of the Thyroid Gland.—Dr. Agnew presented, for Dr. S. W. Gross, a serous cyst of the thyroid gland, with the history and an account of its minute structure. Mary Neff, aged twenty-five, a widow, with one child three years old, came to the Jefferson College Clinic, on the 19th of April, on account of a swelling in the median line of the neck, just above the sternum. She said that her attention was first directed to it by her friends, five weeks previously, when it was the size of a filbert. It rapidly increased, causing a sense of fullness in the throat and slight impediment to respiration and deglutition. Her general health was not good; she occasionally felt sick at the stomach, had no appetite, and now and then vomited. Thinking that this derangement of the system had some connection with the tumor, she applied for its removal. About four days before coming to the clinic, the tumor was painful and the integuments discolored. She was ordered to be leeched, and to take purgative medicine. The tumor being very hard and elastic, fluctuated slightly, and moved with the trachea on deglutition; a small puncture being made, a few drops of fluid, resembling black tea, escaped. On the 2d of June, Mary was brought before the class, and the cyst was removed by Professor Gross, by an incision in the median line of the neck. It was overlapped by the sterno-hyoid and thyroid muscles, and was pretty firmly connected to the deep cervical fascia and the isthmus of the thyroid gland. It was, however, readily enucleated by the handle of the scalpel. A large branch of the right inferior thyroid artery, which ramified over the surface of the tumor, was ligated; the blood oozed from many points, and a very small portion of the isthmus was included in a ligature. The wound was left open for about an hour, being kept constantly covered with compresses, wet with cold water. The dressings consisted of four silver sutures, adhesive strips, and a compress. The patient progressed favorably to a cure, the whole of the wound having united in three weeks.

Anatomical Characters of the Cyst.—The cyst was of a bluish color, of a globular shape, and about as large as a medium-sized egg. The opening in it made by the exploring needle two weeks before the operation, had not closed. It consisted of an outer connecting cellular coat, a middle fibro-cellular, which could be divided into several very fine layers, and an inner lining membrane, which was smooth and glistening like any of the serous membranes of the body. Its walls received quite an abundant supply of blood-vessels from the surrounding parts, and were thicker in some places than in others. In the lower portion of the cyst there was an opake fibro-albuminous deposit, about three-fourths of an inch in diameter; but, with this exception, it was either perfectly transparent or translucent.

Microscopical Appearances of the Lining Membrane.—This consisted of a structureless membrane, here and there fibrillated, and lined with large, pale, delicate polyhedral cells, having distinct and large oval nuclei, resembling tesselated epithelium. It was coated with altered blood-corpuscles, a large quantity of granules and crystals, for the most part prismatic, but occasionally hexagonal or occurring in masses, resembling the so-called blood-crystals. As seen with the naked eye, there were adhering to it in parts, small portions of coagulated blood, and a few small pedunculated, amber-colored bodies, resembling somewhat in appearance a gelatiniform polypus, and consisting of the same altered blood-corpuscles and crystals. Here and there were cells entirely filled with granules.

The lower portion of the cyst was thickened about one half a line, and contained, between the lining membrane and outer coat, a soft, dirty-yellowish substance, composed of imperfectly-formed cells, embodied in a fibro-albuminous matrix.

Physical, Chemical, and Microscopical Characters of the Fluid.—A drop of the greenish-black fluid, which escaped from the puncture, was found to contain shrivelled corpuscles with irregular cell-walls. They were in great abundance; and evidently old and altered, not a single globule being of the normal shape. Upon opening the cyst the fluid was found to be of a dirty brownish-red color, and to amount to six drachms. It had the odor and taste of blood, with a specific gravity of 1·027. It contained a great amount of albumen, as was shown by the action of heat, corrosive sublimate, and nitric acid. After standing fourteen hours, it separated into two parts, the serum constituting about nine-tenths, and the globules the rest of the amount. Upon subjecting a drop of the serum to the microscope, the same altered corpuscles appeared in abundance, as well as a few blood-crystals and cholesterine.

Remarks.—Cysts connected with the thyroid body are of rare occurrence when compared with other affections of this gland. During the last two years, I have seen not less than five cases of this affection, three having occurred at the clinic of the Jefferson College; but the one now communicated, is the only one which I have been able to examine minutely. About the same time that the above patient presented herself at the clinic, a German woman, twenty-one years of age, also consulted Prof. Gross for a tumor similar in physical appearances to that of Mary Neff. She attributed its origin to the effects of parturition, it having made its appearance two months after the birth of her first child. In the case of which I have now given an account, it will be seen that the patient had not been confined for three years, nor could she assign any cause whatever for its appearance. It is not at all probable that the tumor had any connection with labor.

In another case, the specimen of which I obtained last winter at Dr. Agnew's anatomical rooms, and which I send with this communication, it will be observed that the cyst is globular, and of nearly the same size as the one which was removed from the patient. When first seen by me, a puncture had been made into it, from which exuded a dark-colored fluid, containing what I supposed to be disintegrated blood. This cyst, also, was connected to the isthmus of the gland at its inferior part, an throughout its whole extent intimately to the substance of the left lateral lobe. The supply of blood, in this case, came principally from the left superior thyroid artery, a large branch of which ramified over the posterior surface of the cyst. The thyroid plexus of veins was very much enlarged. The gland itself was hypertrophied, which was not the case in the other two subjects, and I have left the arteries supplying the gland, mutilated as they have been in the dissecting-room, in order to show the reciprocal influence of the enlargement of the one upon the other. In this specimen the cyst has become hardened from immersion in alcohol, which prevents an analysis of its contents. From its extensive connections with the gland, extirpation would have been a formidable procedure.

Much diversity of opinion exists in regard to the formation of these tumors; nor shall I weary the Society by presenting them, even with an epitome of the opinions of the principal authorities in pathology concerning this point. It is not always possible to say whether, in their production, the cyst is produced before its contents, and conversely, or, in other words, which was the cause, and which the effect.

In some such as the sebaceous and the true hydatid, we know there is a sac that secretes its contents, which, in their turn, are the cause of its distension; but we cannot with equal certainty trace the origin of some cysts lined by an adventitious serous membrane, which, in most cases, is supposed to be a new formation from a perversion of nutritive action. In regard to the present specimen, I am disposed to attribute its appearance to the formation of an adventitious serous membrane in one of the cells of the areolar tissue in the neighborhood of the isthmus of the thyroid gland. This cell, becoming distended, was finally closed by slight inflammation, and the secreting surface furnished the contained fluid which rapidly increased. The existence of blood in the fluid of the cyst may be attributed to an accidental hemorrhage into its interior during its growth; or, what is more probable, may it not have been a result of perversion of the nutritive functions of the part, in consequence of an accidental inflammation?

DR. DA COSTA presented the following paper on *Cancer of the Pancreas.*—At a former meeting of the Society I exhibited a specimen of primary cancer of the pancreas, and was requested to report more fully on the occurrence of this affection, and on the symptoms by which it is marked. In accordance with this wish, I beg leave to present this paper, accompanied by a table of thirty-seven cases, derived from various sources, and including two brought before the Society.

I have not endeavored to swell the number by instances adduced from the older writers; I have not included in the subjoined table the three cases of Morgagni, the five cited by Bonetus, or the thirty-six observations on scirrhus of the pancreas, which Lieutaud has collected; nor have I referred to the oft-mentioned, but exceedingly unsatisfactory accounts given by Heberden; but I have attempted to bring together the cases of pancreatic disease which have been published by authors still living, or not long deceased, and such as seemed to have been undoubtedly cancer of the organ.

The great difficulty, indeed, in studying cancer of the pancreas is, that, while the older writers have most evidently confounded all chronic alterations of the pancreas under the title of scirrhus, many of the later physicians have taken the ground that cancer does not affect this gland, that all the observations, certainly those of primary cancer, are erroneous, and have brought about a skepticism with reference to the whole subject, which, in connection with the rarity with which the organ is carefully inspected in post-mortem examinations, has tended much to retard our knowledge of its morbid states. Yet there are (leaving out the descriptions of the older writers) a sufficient number of well-authenticated cases of disease of the pancreas on record, not only to prove that the gland is frequently the seat of cancer, but also that, in all probability, cancer is the most common of its chronic affections. These very cases, too, demonstrate that the malignant diseases of the organ are not always, as has been affirmed, secondary, but that cancer may commence in the pancreas and be confined to it, or else extend from it to surrounding textures. (*See cases recorded in the Table.*)

When the pancreas becomes cancerous the disease usually attacks its right extremity. The whole gland may be equally affected, or only the middle portion and the splenic end suffer (*Case* 31;) but this is not frequent. For the most part the cancerous change takes place mainly, if not solely, at the head, the other portions remaining healthy, becoming indurated, or undergoing a fatty degeneration. The disease shows a great tendency to spread to the adjacent lymphatic glands, and a cancer of the pancreas often in reality consists of the transformed head of the organ, so closely blended with these glands, as to have occasioned an apparently uniform tumor of considerable size, which, by pressure, produces obstruction of the ducts leading from the liver, or changes in structure in the surrounding tissues.

Scirrhus and encephaloid are both met with in the pancreas, and run the same course as in other organs. Colloid deposits, too, have been described as occurring. (Dr. Wilks; see Table, *Case* 32.) The natural structures disappear entirely, and the microscope exhibits nothing but abnormal cells, or else the cancer may be infiltrated through the regular gland-tissue.

The form and size of the pancreas are materially modified by the cancerous disease, especially is the size. Enlargement almost invariably occurs, and the organ may exceed three or four times its natural bulk. Duponchel* relates the case of a soldier who died at Cadiz after a long and obscure disease of the abdomen, and in whom a large tumor, of the size of a child's head, consisting of a brownish matter resembling coagulated blood, and of a broken-down cerebral-like substance, was found occupying the place of the pancreas, of the glandular structure of which not a vestige remained. A mass of similar size occurred in the case of a woman described by Caspar.*

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* Bulletin de la Societé Med. d'Emulat. Mars, 1824.

The pancreatic duct often becomes implicated in the disease. Sometimes it remains pervious, but at others it is entirely obliterated. It may be pervious in the diseased mass, or where it opens into the intestine, while at the more healthy portions of the gland it is obliterated. Again, the reverse takes place; it permits the pancreatic secretion to flow, until it reaches the diseased portion of the pancreas, but here and at its mouth it is closed. Cruvelhier† met with what appeared to be a cyst in the pancreas, but which, on closer examination, was proved to be the much-dilated pancreatic duct, the duodenal extremity of which was strongly compressed by a scirrhous degeneration of the head of the pancreas. A still more remarkable case happened a few years ago in the clinical wards of Professor Bamberger.‡ The duct, by pressure at a part of its course, was dilated into a cyst, containing a yellowish-red fluid, of the size of a man's fist. True cysts, however, occur in cancer of the organ; their walls are thin and translucent; their contents may be a bloody serum, (*Case* 19,) or blood mixed with broken down tissue. (Duponchel, *loc. cit.*)

The effects of pancreatic cancer show themselves chiefly on the adjacent organs. Secondary cancers in the brain are not described, nor do the thoracic viscera become often affected. Albers mentions a case in which the lungs were filled with small, yellowish cancerous deposits; Bennett (Clinical Lectures) one, in which gelatinous-looking masses in the lung proved, when microscopically examined, to be cancer; and it is not improbable that the "pulmonary consumption" in Sewall's case (*Case* 3) was cancer of the lung, as it did not come on until a long time after the pancreatic disease was fully developed. The stomach, intestine, and liver, from their proximity to the pancreas, are the organs which suffer most. The *stomach* may be perfectly healthy, or it may be adherent to the pancreatic tumor and thickened, especially near the pyloric extremity. The thickening is due to a simple increase of the normal structure, or to a cancerous deposit in the coats of the organ. The pyloric orifice may be narrowed, and so pressed upon by the tumor as to be nearly obliterated, (*Case* 2.) The mucous membrane of the stomach is found in a state of softening, or of thickening, but for the most part it is perfectly healthy. The viscus may be much distended, or contracted. Its inner surface has been observed to be covered with a dark slimy fluid, or to contain blood, or even as much as a gill of pus, derived (*Case* 22) from a perforation of its coats, through which the pancreatic mass communicated with the stomach. Such cases of perforation have been several times noticed. The perforation occurs at the seat at which the stomach adheres to the morbid mass; the rupture may be at one, or at several places. (Hasenöhl.)

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* Caspar's Wochenschrifft, No. 9; quoted in Canstatt's Jahresbericht, 1844.

† Essai sur l'Anat. Pathol., tome i., p. 286, 1816.

‡ Vol. vi. Virchow's Path. and Therap., p. 667.

The *duodenum* presents the same changes as are met with in the stomach. It may be adherent to the pancreas, thickened and contracted, or distended; its calibre may be nearly obliterated by pressure, (see *Case* 23,) its mucous membrane softened, and one or several ulcerations communicating with the pancreas exist in it. The other parts of the intestine generally remain healthy; yet they, too, have been noted to have been greatly contracted, to have been ulcerated, (*Case* 15,) to have contained (*Case* 23) small cancerous masses, or to have been nearly filled with blood. The colon has been observed to be much contracted, and its coats thickened and covered with small patches of lymph, (*Cases* 17 and 18.) There seems, indeed, to be a very great tendency to fibrinous deposits, and to an increase and thickening of the cellular textures of the body, as witnessed in the intestines, and also in a cirrhosed state of the liver.

The *liver* is very variously affected. It remains healthy, becomes the seat of cancerous deposits, or exhibits abnormal changes with reference to size, density, and color. One of the most frequent appearances is to find it enlarged, and of a peculiar greenish hue. Dr. Bright, in an oft-quoted case, describes it as resembling "dark greenstone porphyry." It may be softer than natural in consistency, but is frequently denser, owing, in some instances, to a thickening of its cellular tissue. Well-marked examples of cirrhosis (*Cases* 26 and 34) have also been observed. In common with all the other organs in the body, it is at times pale and devoid of blood, (*Cases* 7 and 29.) The biliary ducts may be normal, or have their calibre greatly increased. The hepatic duct, as well as the cystic and common duct, are at times in some parts nearly obliterated, while in others they are much dilated; or one duct is dilated and the other compressed. Again, both the hepatic and cystic duct may be expanded, and the common duct be barely pervious, (*Case* 9.) In a case described by King,* the hepatic and choledoch duct above the seat of their compression were dilated to the size of the ileum of an infant. Todd† had a young girl under his care, in whom the hepatic and common duct were so distended as to form a distinct swelling in the epigastric region, which was tapped during life, and was found to contain several quarts of bile. The cystic duct alone may be closed; but the duct which most frequently suffers is the common duct. It is evident, however, that the exact spot of its occlusion, or the state above the seat of compression of it, or of the cystic and hepatic duct, will depend much upon the shape and size of the pancreatic tumor.

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* Medico-Chirurg. Review, 1827, (See Table, *Case* 1.)

† Dublin Hospital Reports, vol. i.

The gall-bladder, in cases of compression of any of the ducts connected with the biliary function, is enlarged and greatly distended. Its coats have been observed to be much thickened, and its mucous membrane slightly ulcerated, (*Case* 23.) Its contents are a dark, inky bile, or an inodorous, colorless fluid, (*Cases* 1 and 15,) which King (*loc. cit.*) tells us has no resemblance in chemical composition to bile.

The other structures situated in the abdomen do not often become affected in consequence of a pancreatic cancer. The omentum may be implicated in the disease; the spleen remains healthy. The supra-renal capsules were involved in a case described by Dr. Bright.* The diseased mass may press upon the nerves and narrow the aorta, as in a case quoted by Mondière from Portal.† In another instance, the latter author has observed an aneurism to have been produced by the pressure of a scirrhous tumor of the pancreas.

The *age* and *sex* of those suffering from cancer of the pancreas may be seen from the following table of thirty-seven cases:—

Age.	Males.	Females.
14 to 22	–	2
24 to 28	2	1
33 to 36	3	–
40 to 46	4	2
48 to 58	8	4
58 to 68	2	4
68 to 78	–	2
Not stated	3	–
	22	15

These figures certainly show that cancer of the pancreas conforms, in respect to age, to the general laws of cancerous disease. It will be perceived that the majority of cases occurred after the fortieth year. The youngest (*Case* 21) was a girl 14 years of age, the eldest a woman of 76. Rokitansky has mentioned an instance of the pancreas having been found scirrhous at birth. With reference to sex, the majority of cases are met with in men. Of the fifteen female cases, two occurred in colored women. Dr. Walshe's statements concerning sex do not agree with my deductions. He thinks the disease is more frequent in the female.*

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* Med-Chirurg. Transactions, vol. xviii., *Case* 7. It may not be without interest to state that in this case no bronzy color of the skin is mentioned.

† Traité de l'Apoplexie.

The exact *duration* of the affection it is not possible to ascertain. Like all chronic diseases, its commencement cannot be accurately fixed. It would seem that, although it may last for several years, and occasion prolonged suffering, it may also run a more rapid course. It is, indeed, in not a few of the cases specially noted, that the patient had been, up to a certain time,—not a year before his death,—in excellent health. In several instances, no marked symptoms appeared until four or five months before death, and a case has been reported in which the disease seemingly commenced with acute symptoms, and ran on, in eleven weeks, to a fatal termination, (*Case* 36.) In one patient it was ushered in by jaundice, in another by a febrile attack, (*Case* 7.) In one case it is recorded that it followed a sudden disappearance of tumefaction of the parotid and submaxilliary glands, (*Case* 9,) in another, (*Case* 28,) that it was produced by continual pressure against the stomach. Death usually takes place from gradual exhaustion. But it may occur after hemorrhage, or by the development of cancer in other parts of the body, or with the symptoms of an adynamic fever, (*Case* 8.) The patient mentioned by Dr. Campbell (see *Case* 22) expired suddenly, after a sound like something bursting. The stomach had been perforated, and was found to contain a large quantity of pus.

The *symptoms* of cancer of the pancreas are not always the same; they are mostly produced by the effects of the disease on other organs. The affections of the pancreas themselves give rise to few, if any, special symptoms; to none which are constant.

Local Signs.—Amid the local signs, one of the most important is the existence of a swelling, or a tumor. In thirteen cases out of the thirty-seven recorded below, a tumor is specially noticed; in one, there was fulness at the epigastrium; and in one at the left hypochondrium; in one fullness at the epigastrium, with resistance to touch; in one, an indistinct hardness at the pit of the stomach, and in another, at the right side of the abdomen, making eighteen cases in which the pancreas had given rise to perceptible signs of its enlargement. The situation of the tumor is mostly noted as in the epigastric region, or between this and the umbilicus. It may extend into the right hypochondrium, or into the left, or (*Case* 22) into both. It may be fixed or movable, (*Case* 35,) with limits not definable, or capable of being accurately determined by the touch and by percussion. In some instances it is painful on pressure; in others not. In several very interesting cases it was accompanied by pulsation and a blowing sound, and might thus have been readily mistaken for an aneurism. In Dr. Battersby's patient (*Case* 17) there was an apparent systole and diastole; the pulsation ceased in two months, but the bruit and the tumor remained. In the patients of Sandwith, Fletcher, Tessier, and McClurg, (*Cases* 20, 24, 27, and 28,) the pulsation continued as a permanent phenomenon. Both pulsation and blowing sound may be accounted for by the tumor lying across, and compressing the abdominal aorta. In Dr. Battersby's case, however, the blowing sound may have been produced by the deposits which covered the inner coat of the abdominal aorta.

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* Walshe on Cancer, p. 321.

An epigastric tumor of a different nature may be caused by disease of the pancreas, and lead to singular errors of diagnosis. Petit* operated on a case of what he thought to be a strangulated hernia of the stomach or colon. The tumor was soft and compressible, and accompanied by vomiting and hiccough. The operation demonstrated that it was the stomach, pressed forward by an enlarged pancreas; whether cancerous or not, was not determined. In another case already cited, (See *Case* 21,) an epigastric tumor was not the cancerous pancreas itself, but a dilatation of the hepatic and choledoch duct produced by it.

Pain is a very constant symptom: it is mentioned in thirty-two out of thirty-seven cases. The seat of the pain is, in most instances, the epigastrium. In twenty of these thirty-two cases it seems to have been there most marked, although it was not always confined to this seat, but extended to the right side, or to the left, or to the back, or to the umbilicus and lower part of the abdomen. In one case it was an intermitting pain confined to the lower part of the abdomen. In two or three others it extended equally over the whole abdomen. In four cases it had its seat of greatest intensity in the back, but in one of these there was also deep-seated epigastric pain, a constant pain in the lower part of the abdomen, and pains extending to the arms. In another case they radiated to the left half of the chest, and to the abdomen. In three cases the pain was mainly felt in the sides, and extended into the back.

The character of the pain is very various. In the majority of the cases it is severe, in some excruciating, and in paroxysms of several days duration. It is, at times, much like colic; or again it is described by the patient as "a deathly distress," (*Case* 29,) or (*Case* 19) as a "hot sensation extending into the back." In some cases it is very slight, more of an undefined uneasiness (*Case* 9) than actual pain. In Andral's patient at La Pitié,† the pains were like blows of a hammer, or like the perforating dart of a dagger, and increased at night. The pancreatic tumor was found, on post-mortem examination, to have compressed the nervous plexus which spreads around the abdominal aorta. The pain is not, as a rule, increased by taking food, for this is only noted in very few of the cases, (see 18 and 29;) on the other hand, there are instances in which it is specially stated that it was not. The pain may become duller (*Case* 32) as the disease advances; it may or may not be increased on pressure. It may be suddenly augmented by turning in bed from side to side, (*Case* 14.) In not a few cases is it increased by the erect position, and hence we find patients seeking relief by stooping, and curving their body forward so as to relax the abdominal parietes, (see *Cases* 2, 3, 5, 13, 28.)

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* Discours sur la Medecine du Cœur: Lyons, 1806.

† Lancette Française, No. 16.

Vomiting is a symptom, the frequency and importance of which it is difficult to determine, for it is obvious that in those cases in which much disease of the liver or cancer of the stomach were superinduced, it cannot be established in how far the symptom may be placed in connection with the disease of the pancreas. In the thirty-seven cases below noted, vomiting is mentioned in twenty-one; but in two of these it was a transitory phenomenon, lasting a very short time, and occasioned in one, by eating indigestible food. In one case it came on after an attack of hepatitis, which happened seventeen years before any symptoms of pancreatic disease developed themselves; in three others, it occurred in patients in whom considerable disease of the liver and stomach was, after death, detected. Leaving out these six cases, we still find it in fifteen. In nearly all of them it was a late symptom, and in only a few constant. In one patient (*Case* 20) it did not appear until six weeks, and in another not until ten days before death, (*Case* 23,) although in him the pylorus was found greatly contracted. The narrowed state of the pylorus, caused by the pancreatic disease, or the pressure of the tumor on the stomach will explain the vomiting in several instances. In a case mentioned by Dr. Henry Lee,* at the Royal Medico-Chirurgical Society, in which vomiting was among the symptoms, the stomach was perforated by the head of the pancreas, which had produced ulceration by pressure. In another case, (22,) in which ulceration of the stomach occurred, nausea and vomiting became prominent symptoms as the pancreatic tumor increased. The vomited matter consists either of the food that is swallowed (in many cases there is neither nausea nor vomiting until shortly after food be taken) or else (*Case* 18) of a substance like bran and water, of a bilious fluid, (*Case* 9,) of fluid of a glairy character, or of a watery, colorless fluid, (*Cases* 29 and 37;) or, again, the ejection may contain blood, (*Cases* 9 and 16.) The watery fluid that is sometimes discharged may be very abundant. It is thought by some to be the pancreatic secretion itself, and not to be derived from the stomach at all; others regard it as an increased salivary flow. The vomited matter is stated in one case, (23,) in which the pylorus was greatly contracted, to have been like coffee-grounds. But the coffee-ground vomit, so often seen in cancer of the stomach, is evidently here but exceptionally met with. In the case kindly communicated to me by Dr. Harris, there was in the vomit a distinct blackish sediment; this was proved to be stove coal, of which the patient was in the habit of consuming daily about half a pint, eating it in the form of cinder.

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* Lancet, 1842.

The condition of the *bowels* is usually that of constipation. In thirty-four cases constipation is mentioned in nineteen; in four the bowels were regular; in three diarrhœa occurred as a late symptom; one patient passed blood and pus by stools; two others, at times blood; in the other cases diarrhœa existed, or alternated with constipation. The fæces are mostly hard, and vary in color according to the presence or absence of the biliary secretion. Hemorrhage, into the bowels, which has been observed as occuring in several cases, will explain the black, bloody stools sometimes voided. Dr. Bright has directed attention to the presence of *fatty* stools in cases of pancreatic cancer which he has published (*loc. cit.;*) they were noticed in three cases. But he is far from having affirmed, as subsequent writers wish us to believe, that they are of constant occurrence. He himself speaks of cases of scirrhous pancreas without fatty discharge, and, although he thinks that it is connected with "disease probably malignant of that part of the pancreas which is near to the duodenum, and ulceration of the duodenum itself," he does not, by any means, lay this down as positive, since, at the end of his paper, he suggests that the symptom might be diagnostic "of the *nature* of the diseased action rather than of its seat." Many observers have since brought forward instances of fatty discharges in which no disease of the pancreas existed, and, on the other hand, to the cases of Bright, but few others have been added in which these discharges were associated with affections of this gland.* A desire to bring the physiological teachings of the present day in connection with morbid anatomy may have prompted many to accord so much importance to the occurrence of fatty stools in pancreatic disease. But pathological anatomy seems to contradict the assertion that the pancreatic secretion possesses alone the power to emulsify, and to render the fatty matters fit for absorption. It can certainly not be the only agent. The cases of Dr. Bright would lead rather to the conclusion that, for fat not to be acted upon, the duodenal secretions must also be vitiated, and the flow of healthy bile interfered with. For in all of them there were also ulcers in the intestine, and the ducts through which the bile flows were compressed or nearly obliterated.

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* Dr. Eisemann, Viertel Jahreschrifft für die praktische, Heilk, 1853, (quoted in the Med. Examiner, 1855,) speaks of several cases of pancreatic disease, with abundant fatty discharge, but in the case which came under his own care there was none. In some of the instances quoted the oily evacuations had ceased, although the pancreas was so indurated as to have rendered the performance of its function impossible.

Jaundice constitutes, in a large proportion of cases, one of the most prominent symptoms; it is persistent, and resists all treatment. In most instances it does not appear until the pancreas has enlarged considerably, in other words, not until late in the disease; but in a few cases it is noted among the early signs. It usually increases as the disease progresses, and the skin becomes of a deep-yellow, or of a greenish hue, (*Cases* 1 and 36.)

Dyspeptic symptoms are a class of symptoms which are found in pancreatic cancer, in a very varying degree. From the vague manner in which the term is made to embrace different states, it is difficult to ascertain the exact nature of these symptoms in the reported cases. They are noted in twenty-five out of thirty-seven cases, some as of early, some as of late occurrence; but of these twenty-five cases there are several in which the signs of indigestion had been evidently present at a time long anterior to the other symptoms of the disease, and probably to the disease itself. *Acid eructations* were troublesome in five cases; in two cases there was much pain after eating; in five cases there was considerable flatulency, incontrollable in one, but not dependent upon taking food, (*Case* 30.) A feeling of weight and oppression at the stomach are noted in three cases; of sinking, relieved by food, in one; of great irritability of the stomach in two. Constant *thirst* is mentioned in six cases, but in one of these diabetes existed.

The *appetite* fluctuates in every conceivable way; it frequently remains good even to the last; it is sometimes capricious, although the patient (*Case* 7) can take a great deal of food; anorexia is noted in seven out of the twenty-five cases in which dyspeptic symptoms are mentioned. *Hiccough* was in two cases (28 and 34) an exceedingly annoying incident. The *tongue* is not often alluded to; from which it may be inferred that it does not often present any peculiarity. It is stated in four cases to have been dry; in two, it was covered with a yellowish coat; in one, with a brown fur; it remained clean throughout in one, and its cleanness and great moisture are especially commented on in two interesting cases (17 and 18.) The *ptyalism*, which sometimes takes place, will give rise to this macerated appearance of the tongue; but, although it may be both very abundant and exceedingly offensive,* the occurrence of this salivary discharge is not frequent, and its importance in diagnosis, therefore, less than some authors state it be.

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* Mondière. Archives Générales de Medecine, 1836.

Dropsy is met with in the advanced stages of pancreatic cancer. It was present in sixteen out of thirty-seven cases; yet, although many of these were complicated with hepatic derangement, in none was it very marked; in most, ascites was present; in some, ascites and anasarca; in one case, marked anasarca of the upper and lower extremities, (*Case* 17,) and only slight ascites; and in another, (27,) œdema of the feet was seen disappearing and reappearing.

Emaciation and *debility* are both very striking and constant symptoms. The emaciation is great and progressive. In a case, reported by Sandwith, the patient was so emaciated that the spine could be distinctly traced through the abdominal parietes. Debility usually goes hand in hand with the perceptible loss of flesh, but it may not be as extreme; and, again, it is sometimes prominent among the earlier symptoms. In exceptional cases the loss of flesh is slight, and debility not marked. The *countenance* is usually pallid, and has a distressed look; the features become pinched, and the face is expressive of suffering and anxiety. The skin is sallow, of a bloodless hue, or jaundiced, or more rarely it is straw-colored, (*Case* 28.) The *pulse* is not often noted, when it is, it is stated to have been quicker than in health. A tendency to hemorrhage must also be alluded to; blood was lost from the stomach, bowels, and lungs, in several cases.

The main symptoms, then, of pancreatic cancer, are a tumor in the epigastric region, pain there, or in the back, constipation, progressive emaciation and debility, and obstinate jaundice and occasional vomiting, as the disease advances. The diagnosis is possible, if these symptoms be present, and provided we are able to exclude with certainty the diseases of the stomach and of the liver. I shall not attempt to decide in how far the symptoms may be shared by other chronic affections of the pancreas. Tubercle of that organ is rare, and is associated with tubercle of the lung or of the brain.* Chronic pancreatitis gives rise to many of the same phenomena; but, taking the cases which I have met with in pursuing this inquiry as my standard, I should say that those signs which indicate a tumor, and the symptoms which show its marked growth and pressure upon other organs, are not often present; that pain does not occur to such a marked degree; that the falling off in health is very gradual, and the disease slower of progress, and also that the bowels are not as constipated, but are, on the contrary, more frequently relaxed. It is, however, fair to state, that Dr. Claessen, in a work on Diseases of the Pancreas, (Cologne, 1842,) remarks that constipation in chronic pancreatitis is urgent and enduring.

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* Würtemberg. Med. Correspond. Blatt.

Case.	By whom and where reported.	Age and Sex.	Duration.	Local Signs.	Pain.	Vomiting.	State of Bowels.	Jaundice.	Emaciation and Debility.	Dropsy.	Dyspeptic Symptoms.	Other Symptoms, and Remarks.	Post-mortem Appearances.
1	King. Medico-Chirurg. Review, 1827; from a case under the care of Dupuytren.	45; male.	Not mentioned; but upwards of four months.	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned, except that during the day before death, stools of black and bloody appearance passed involuntarily.	Very great (skin of a greenish-yellow color) occurred upwards of four months before death.	Emaciation moderate; debility not mentioned; (excepting as noticed after an operation for cataract; then, also, tendency to syncope, in the perpendicular position.)	None.	Not mentioned.	Cataract of some years' standing.	Pancreas was large; a portion of it forming, with a cluster of scirrhous glands, a tumor, by which the common duct was much compressed, but its mouth remained pervious. The pancreatic duct was free; so was the cystic duct. The hepatic and choledoch duct, above the seat of their compression, were distended to the size of the ileum of an infant, and filled with gas. The gall-bladder, besides gas, contained an inodorous, colorless fluid, which had no resemblance, in chemical composition, to bile. Liver was large and green. Large intestines contained coagulated blood.
2	Sewall. Med. and Physical Journal, vol. xxxi. p. 96.	27; male.	About one year.	Tumor in epigastrium.	Severe, deep-seated, epigastric pain, increased by the erect position; hence patient always in a curved position of the body.	Almost constant.	Constipated.	Not mentioned.	Both great.	Very slight ascites; (post-mortem.)	Acid eructations; great irritability of stomach.	Disease preceded by tumefaction of parotid and submaxillary glands, which suddenly subsided.	Pancreas was nearly three times its natural size; hard throughout, irregular, and unyielding. Its right extremity pressed firmly on the duodenum, and on the small extremity of stomach, thereby nearly obliterating the pyloric orifice. Other organs healthy.
3	Sewall. *Ib.*	"A young man."	A few years.	Not mentioned.	Deep-seated, epigastric pain, increased by the erect position; hence always a curved position.	Present.	Not mentioned.	Not mentioned.	Great emaciation; debility not noted.	Slight ascites; no œdema.	Great acidity; no food except milk could be retained on stomach, yet appetite remained good.	A pulmonary consumption came on two months before death.	Pancreas—only one of the abdominal viscera, which was diseased, was enlarged, and scirrhous, particularly its right extremity, which embraced the duodenum, and pressed so firmly on the pylorus that its orifice would scarcely admit of the introduction of a common-sized catheter. Stomach and intestines were greatly contracted. Liver healthy. Lungs hard and unyielding, and in many places ulcerated, and affected with tubercle.

4	Martland. Edinb. Med. and Surg. Journal, 1825.	60; female.	Six months.	Hard tumor, about the size of the palm of the hand, at scrobiculus cordis and right side, below the margin of the ribs; very painful on pressure, and enlarging toward the end of the complaint.	In and about the region of the tumor.	Not mentioned.	Regular; stools very white.	Most intense; came on a few weeks after first manifestations of the disease.	Great and progressive debility, and extreme emaciation.	Not mentioned.	Anorexia; great thirst; furred and dry tongue.	Pulse between 80 and 100.	Pancreas. The head formed a scirrhous tumor about the size of a hen's egg. In this tumor was lodged the ductus communis, which was almost impervious, and was still more obstructed by a small calculus. The cystic and hepatic ducts were considerably dilated. Gall-bladder much enlarged. Liver studded with small, distinct tubera, which were confluent opposite the gall-bladder.
5	Abernethy. In a lecture delivered at St. Bartholomew's Hospital. Lancet, April 21st, 1827.	"A man of advanced age."	Not mentioned.	None.	Pain in the epigastric region, gradually extending, and increased by pressure, by erect posture; hence patient constantly stooping forward. He had also to be propped up in bed, to lessen pressure.	Not mentioned.	Constipated.	None; (countenance had a distressed appearance, even from commencement, but was never jaundiced.)	Increasing debility.	Not mentioned.	Pain after eating.		Pancreas in a state of complete disorganization and ulceration from end to end. State of other organs not mentioned.
6	Abercrombie. "Diseases of the Stomach," p. 412. Am. ed.	56; male.	Two years.	Not mentioned.	Pain in the left hypochondrium, extending into back.	None.	Regular.	Occurred only a few weeks before death.	Both present; died gradually exhausted.	Not mentioned.	Symptoms of indigestion present.		Pancreas, in parts, hard; in others soft, and composed of yellowish and white matter. Mass attached to spine. Liver enlarged and soft. Other organs healthy.
7	Abercrombie. *Ib.*	35; male.	Eighteen months.	Not mentioned.	Undefined uneasiness in epigastric region.	As a late and transitory symptom.	Sometimes constipation, at others diarrhœa.	None; (countenance remarkably pale.)	Both present to a marked degree, and progressive.	Not mentioned.	Present; appetite capricious; took a good deal of food.	Strong action of heart; throbbing in head; disease commenced with a febrile attack; frequent perspirations at night.	Pancreas considerably enlarged, and of nearly cartilaginous hardness, except some spots, which were soft, with the appearance of medullary sarcoma. Pylorus thicker than normal, and adherent to pancreas. Other organs healthy, but very devoid of blood.

Case	By whom and where reported.	Age and Sex.	Duration.	Local Signs.	Pain.	Vomiting.	State of Bowels.	Jaundice.	Emaciation and Debility.	Dropsy.	Dyspeptic Symptoms.	Other Symptoms, and Remarks.	Post-mortem Appearances.
8	Andral. Archives Générales de Medicine, 1831; or *Lancette franc.*, T. Y. No. 216.	54; female.	Four months; previous health good.	Fullness in left hypochondrium, but no tumor perceptible.	Intense pains in dorsal region, extending to the left half of the chest, or through abdominal region; more frequent at night, lasting from several hours to several days at the time.	Not mentioned.	Diarrhœa as a very late symptom.	None.	Not mentioned; (face pale, expressive of suffering.)	None.	Extreme disgust for taking food; tongue had a yellowish coat.	Insomnia; febrile signs; patient died with all the symptoms of an adynamic fever.	Pancreas enormously enlarged, and transformed into a tumor, which seemed a combination of scirrhus, encephaloid, and tubercle. (?) This mass compressed the aorta, and the plexus of nerves which surrounds it. Other organs healthy. A sanguineous effusion into the pericardium.
9	Becourt. Quoted by Andral, Pathol. Interne. Tome ii. p. 283.	45; male.	Four months.	Pain on pressure at a small point between umbilicus and curvature of stomach; heat over stomach.	Above umbilicus; abdominal cramps; at times violent pains over stomach, extending over whole abdomen.	Nausea; also vomiting, in last two months, bilious, sometimes sanguinolent ejections.	Costive; hard stools, at times white.	Occurred early, and became intense; slight jaundice, with feeling of oppression at the epigastrium, were indeed the first symptoms.	Great debility; also emaciation.	Slight ascites.	Great thirst; appetite good: cardialgia flatulency.	At times passive hemorrhage.	Pancreas—head scirrhous, rest converted into fat; liver of an olive-color, and containing a few cancerous spots. Gall-bladder distended, containing very dark bile; hepatic and cystic ducts enlarged; common duct very much compressed, and barely pervious. Stomach healthy.
10	Percival. (Transact. of College of Physic., Ireland,) Vol. ii. p. 132.	"Middle aged man."	Three months.	Epigastrium distended; tumor felt protruding from middle.	Not mentioned.	Bilious vomiting.	Blood and pus passed by stools.	Present.	Emaciation and much debility.	Anasarca toward the end.		"Disordered secret. of urine."	Liver "much diseased." Pancreas scirrhous, contained a considerable abscess. Ductus com. choled. closed, in the parts adjacent to the pancreas. Gall-bladder full; cystic duct pervious.

11	Dr. Bright's Cases. Vol. xviii. Med.-Chir. Transact., 1833. Case I.	49; male.	One year.	None.	Pain in loins.	Not mentioned.	Stools copious and light-colored; for the last two months fæces contained a yellowish, fatty matter, and bowels were much relaxed.	Present; commenced six months after first symptoms of disease.	Great debility, and emaciation, continually increasing.	Slight ascites; legs very slightly œdematous.	Great thirst and appetite.	Marked enlargement of liver; frequent urination; diabetes; acute pleurisy two weeks before death.	Pancreas hard and cartilaginous to the touch; of a bright-yellow color; its head formed, with the surrounding glands, a hard, globular mass; at junction of pancreas with duodenum ulcers had taken place. Liver resembled dark greenstone porphyry, and contained hard, circumscribed masses; its ducts were enlarged; common duct dilated, but terminated by a *cul-de-sac* in diseased part of pancreas. Signs of jaundice pervaded many structures; serum olive-colored; coating of fibrine on pleura.
12	Dr. Bright. Case II. *Ib.*	50; female.	Not ascertained; certainly not less than seven or eight months, perhaps some years.	None.	No pain on pressure; some pain at lower part of abdomen, relieved by pressure, and occurring only at intervals.	Retching and vomiting for seventeen years; increased much within the seven months before death.	Rather costive; evacuations whitish; a few dark motions like pitch; a week before death large coagula of blood; while under observation for three months, fatty matter noticed in her dejections.	Very great; gradually increasing; did not occur as a permanent symptom until four or five months before death.	Progressive and great debility; general emaciation, cheeks much sunken, but some fat on abdomen.	None.	Not very marked.	Good health until seven or eight months before death. Seventeen years ago severe hepatitis; she became very drowsy during the last days of her life.	Pancreas hard and cartilaginous; its head enlarged and glued to duodenum, and communicating through an ulcerated spot with this. Common gall-duct pervious, but evidently had been compressed; biliary ducts distended. Liver cancerous. Lungs healthy, but firmly bound down posteriorly by strong, adhesive bands.

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13	Dr. Bright. *Ib.* Case III.	21; female.	Decided illness for two months.	Indistinct hardness on right side of abdomen.	No pain mentioned.	Not mentioned.	Rather bound, but subsequently evacuations were copious, fatty, and thin.	Slight; increased towards close of life.	Emaciation not great, but great debility; restlessness.	Anasarca; also some ascites.	Not mentioned.	Out of health for two years; slight cough; preferred lying in a raised position.	Pancreas—hard mass near its head; another near the spleen; intervening portion seemed more healthy; masses of yellow color. Ulcers in the intestine; some ulcers communicating with glands in the meso-colon; mesenteric glands and supra-renal capsules diseased; also, bronchial glands; slight deposit of round size at apex of lung. Liver enlarged, of a dark-olive color; hepatic and cystic duct enlarged, but common duct becoming much constricted before entering duodenum.
14	Dr. Bright. *Ib.* Case VI.	76; female.	Thirteen months; good health before attack.	None.	Severe pain in the sides, extending to the back; pain also immediately under right mamma; acute pain in turning from left to right side; pain in the side became very fixed.	Vomiting not mentioned; nausea as a late symptom.	Constipated at the latter portion of the disease; clay-colored stools.	Jaundice only latterly present.	Great and increasing lassitude and debility.	Among the late symptoms anasarca; also some ascites.	Weight and distension of stomach.	Palpitation of the heart.	Pancreas large and in a scirrhous condition, involving the ductus choledochus in the diseased structure. The common duct was dilated up to its termination, where it was found completely obliterated; near the duodenum it formed a complete *cul-de-sac*. Liver small, but gorged with bile. Gall-bladder enormously distended. Duodenum thickened, and somewhat contracted.

15	Dr. Bright. *Ib.* Case VII.	35; male.	Thirteen months.	Tumor above umbilicus, reaching not quite to pit of stomach.	Not mentioned.	Not mentioned.	Constipated; stools became, subsequently, clay-colored and yeast-like; a few days before death very dark.	As a late symptom.	Both present to a marked degree; at first greater debility than emaciation.	Not present.	Not mentioned.	A tumor below umbilicus.	Pancreas—malignant disease towards its middle; its splenic and hepatic heads not infiltrated; its duct pervious. Its middle portion was involved and continuous with a large, movable mass, connected with the lower tumor seen during life. This tumor consisted of masses, which surrounded the aorta and iliacs, and, passing up the spine, involved the pancreas and renal capsules. Upper tumor was a movable mass in the omentum. A few scirrhous tubera in liver. Gall-bladder distended. Orifice of cystic duct very nearly closed; hepatic duct and common duct both somewhat contracted; colorless fluid in gall-bladder and cystic duct. Small, malignant tumor attached to surface of the heart. Pancreatic duct seemed obstructed in healthy part of pancreas; in other parts pervious.
16	Dr. Bright. *Ib.* Case VIII.	43; male.	Ten months.	Indistinct hardness at pit of stomach.	At pit of stomach.	Towards end of life; severe vomiting of a dark-colored fluid shortly before death.	Relaxed at first; clay-colored stools, then varying in color.	Jaundice appearing suddenly and early; became persistent.	Both markedly present; debility as an early symptom.	Not present.	Flatulency.	Appetite unusually great; itching over body; frequent drowsiness; tendency to hemorrhage.	Pancreas not enlarged, but its head formed a large yellow mass, with neighboring absorbent gland; pancreatic duct greatly enlarged. Liver full of yellow spots, of varying size; liver enlarged; all the ducts involved in cancerous masses; hepatic duct enlarged, and filled with colorless fluid. Stomach full of dark, grumous fluid. Serum in chest of dark-yellow color. Ulcer in duodenum.

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17	Dr. Battersby. Dublin Medical Journal, Vol. xxv. 1844. Case I.	About 58; female.	Sick twenty-five months; disease marked for thirteen months.	Deep-seated pulsating tumor in epigastrium, having a well-marked *bruit de soufflet*; the pulsation ceased in two months, but the bruit and the tumor remained; fullness in epigastrium.	Severe pains in back, extending to arms; then uneasiness and deep-seated pain in the epigastrium, increased by pressure; also, constant pain in the lower part of abdomen.	None.	Very sluggish; passages attended with violent straining and intense distress; fæces generally watery, deficient in bile.	Present, but not to a great degree.	Both present; emaciation extreme.	Slight ascites; very marked anasarca of upper and lower extremities, which increased much at later portion of disease.	Eructations; appetite nearly gone, but this not until last month of disease; no thirst; tongue pale and clean.	Ptyalism; mouth always full of saliva; dysphagia.	Pancreas enlarged and hard throughout; every trace of its natural structure had disappeared. At its lower edge existed a thin cyst, about the size of a walnut. Duodenum extremely contracted, and adherent to pancreas; pancreatic duct was pervious for about an inch only from the duodenum. Liver small, of a dark-gray color, and dense; owing, apparently, to a thickening of its cellular tissue. The common duct and hepatic duct were not interrupted; colon and cardiac orifice of stomach much contracted; cellular tissue increased and hard. Mesenteric vessels and nerves involved in the scirrhous mass; gastro-hepatic omentum dense, hard, and thickened; aorta diseased by deposits in its entire course through the abdomen.
18	Dr. Battersby. *Ib.* Case II.	24; male.	Four years.	None.	Severe pain in stomach, coming on generally after meals; subsided after vomiting; sometimes appearing in the middle of the night.	Present; sometimes of dark fluid, sometimes like bran and water.	Severe constipation; diarrhœa at end of life.	Not mentioned; (skin sallow.)	Emaciation; features pinched; debility not mentioned.	Ascites and anasarca, both as late symptoms.		Cleanness and great moisture of tongue.	Pancreas dense and cartilaginous; confounded somewhat with surrounding structures. Liver healthy. Stomach and intestines distended. The sub-mucous coat of ileum and colon thickened; also covered with small patches of closely-adhering lymph.

19	Crompton. Birmingham Path. Society; in Prov. Med. Journal, Dec. 1842.	60; male.	Upwards of two years.	None.	Constant pain below the ensiform cartilage; sometimes "a hot sensation," sometimes pain extending into the back.	None, until last month, then only for two days, after eating indigestible food.	Tolerably regular; at times somewhat relaxed; dejections of good color.	Slight and not permanent.	Extreme and progressive emaciation; (a peculiar pallid appearance of countenance noted.)	None.	Appetite irregular; suffered more after a full meal; mouth generally clammy; tongue constantly covered with a brown fur at the base, and down the centre.	Pulse somewhat quick; skin dry and harsh.	Pancreas hard as cartilage; its left side distended by a large cyst, containing a bloody fluid. Many of the mesenteric glands enlarged and hardened. Liver small; scirrhous tubercles scattered through its substance; cystic duct obliterated by a deposit. A few calcareous deposits in lungs. Other organs healthy.
20	Sandwith. Ed. Med. and Surg. Journ. Vol. xvi. p. 380.	67; female.	Not mentioned.	Pulsation, left side, below cartilage of false ribs.	Continual pain in epigastrium, extending to hypochondrium; at times most intense; increased on pressure.	Not until six weeks before death, then very constant and distressing; everything she swallowed was rejected.	Costive.	None. (Complexion sallow.)	Both; eyes had a peculiar expression of anxiety; emaciation was extreme; spine could be traced through abdominal parietes.	Not mentioned.	Loss of appetite.	Great agitation, tore the bed-clothes, etc.	Pancreas presented usual signs of scirrhus. Stomach erythematous. Splenic artery imbedded in scirrhous matter.
21	Todd. Dublin Hospital Reports. Vol. i.	14; female.	Some months.	Tense swelling in epigastric region, extending to right hypochondrium; it was tapped, and a greenish fluid escaped.	In epigastrium; increased on pressure; at times severe and very acute.	Not mentioned.	Not mentioned.	Deep orange-colored skin.	Great debility and emaciation.	Ascites and anasarca.	Present.	Spasms and convulsions; had had, for a long time, pains in the abdomen; development of disease followed; a fever, with relapses.	Pancreas; head and glands around it converted into a hard, solid. mass; its duct obliterated. Stomach somewhat thickened. Liver healthy; cystic duct dilated, but at its juncture with hepatic it was impervious; remaining portion natural.

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22	Henry F. Campbell. South. Med. and Surgical Journal. Vol. v. 1849.	72; female.	Not mentioned.	Tumor like large orange in epigastrium, extending into both hypochondriac regions.	Pain in epigastrium; two months previous to death became very distressing.	Nausea and vomiting as tumor increased.	Not mentioned.	Not mentioned.	Both to a high degree.	None.	Present.	Expired suddenly, after sound like something bursting.	Pancreas much enlarged; altered in structure, excepting at left extremity; tumor at the right extremity, with pus on surface, and ruptured entrance, which communicated with a cavity in its interior, and with a rupture in the rear of the stomach. This viscus, containing a gill of pus, was softened towards pyloric extremity. At the greater extremity thickening of its coats. Duodenum, near pancreas, was softened. Liver small, and very dense, of darker hue. Gall-bladder much distended; cystic duct distended; duct com. choled. occluded by tumefaction and induration of duodenum. Wursungian duct only seen at left extremity, and here its calibre obliterated.
23	Dr. Greene. Dublin Journal of Medical Science. Vol. xxv. 1844.	Male; age not stated.	Nine months.	None, save fullness in epigastrium.	Pain in epigastric region, and over umbilicus, sometimes like colic.	None, except ten days before death, then coffee-ground matter.	Constipated.	Jaundice intense.	Not mentioned.	None.	Anorexia; thirst; acid eructations; signs of indigestion were the earliest symptoms.	A week before his death delirium; died in that state.	Pancreas.—Its head was bound down, with the ascending and descending colon, into a cancerous mass, with which the duodenum was also connected; cystic and hepatic duct obstructed by the malignant growth. Mucous coat of gall-bladder ulcerated in several spots. Cancerous masses in several parts of the small intestines. Stomach dilated; pylorus hard, thick, and firm, and its calibre greatly contracted.

24	Dr. Fletcher. Birmingham Path. Society: Jan. 20th, 1844. Prov. Med. Journal.	52; female.	Not mentioned; (under treatment for two months.)	Hardness and increased space of dullness, extending from the right hypochondrium into the epigastrium; pulsations felt there and in the left hypogastric region; and a distinct *bruit de soufflet* attended each impulse when the patient was in the recumbent position.	Intense, excruciating pain in region of stomach; increased on pressure; pain extended to right hypochondrium, and down to the umbilicus.	Vomiting generally in about half an hour after taking food; constant nausea.	Costive; scanty evacuations twice or three times daily in an advanced stage of the disease.	Not mentioned.	Extreme emaciation.	Ascites; bowels above very tympanitic.	Irritable stomach; great thirst; tongue dry and red.	The whole surface of abdomen was tender; pulse small and feeble, 120 per minute.	Pancreas.—Entire organ carcinomatous; its head very much enlarged, wrapping around the duodenum, and inclosing that intestine in its diseased structure, so as to produce a stricture just below the pylorus. Liver studded with carcinomatous tubercles; other organs were healthy.
25	Albers. Rheim. Corresp. Blatt, 1843; or, Canstatt's Jahresbericht, 1849, Vol. ii.	50; male.	Upwards of one year; (previously in good health.)	Fullness of epigastric region; a tumor with an irregular surface felt there, and in the right hypochondriac region; and a pear-shaped, movable body between twelfth rib and the anterior superior spinous process of the ileum.	Above umbilicus, and extending to right hypochondrium; subsequently pain in the left side, extending to ensiform cartilage, and to umbilicus; also, dorsal pain; pain not constant; also, pain over spinous processes of all lumbar vertebræ; at least on pressure; (these vertebræ were very prominent.	As a late symptom; matter vomited; yellowish-green, then dark matter.	Soft, white stools; very late in the disease black stools.	Present, and increased; occurred as an early symptom.	Present.	Not mentioned.	Eructations of a bitter fluid; also, clear, yellowish, green, and acid fluid expectorated; appetite good; very fetid breath.	Dullness on percussion on left side of chest; disposition to lie on the back; salivation for three months, after taking ℈ij. of calomel; urine dark color, containing cholesterine; passed with some difficulty.	Pancreas.—Its head hard and degenerated, forming a yellowish tumor, which, microscopically examined, showed irregular cells, with several nuclei. Similar cells are seen in the small, yellowish deposits in the left lung, and in the liver; pancreatic duct pervious, and could be traced to the middle of the gland. Gall-bladder much dilated. The entrance of the common duct could not be found. Pancreas adherent to duodenum, and at seat of adhesion an ulcer in the latter.

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26	Caspar. Caspar's Wochenschrifft, No. 9; quoted in Canstatt's Bericht, 1844; 3.	40; female.	Not mentioned.	Tumor could be felt, whose edge extended along median line to umbilicus.	Not mentioned.	Present mainly after taking food.	At times stools containing dark blood	Present.	Present.	Ascites as disease advanced.	None.	Vomiting commenced after delivery.	Pancreas, the size of a child's head, and in a state of scirrhous degeneration; cirrhosis of the liver; gall-bladder much distended.
27	Tessier, Journal de Medic. de Lyon, Nov., 1847.	33; male.	Not mentioned; (appeared, when first seen, in tolerably good health.)	Hard, pulsating tumor extending from ensiform cartilage to umbilicus; abdomen prominent. In the last stages abdomen constantly rising, and simultaneously so with pulse, each movement accompanied by a sound audible some distance from patient, (glou-glou.)	Present; when the œdema appeared there was violent pain extending to the feet.	Not mentioned.	Constipation.	Doubtful; pale-yellowish complexion.	Not mentioned; but great debility is noted as perceived suddenly two days before death.	Œdema of feet, disappearing and reappearing.	Not mentioned.	Pulse became small; face altered; extremeties cold two days before death.	Pancreas.—Whole of the organ converted into a cancerous mass, which compressed the aorta; a few mesenteric glands around the tumor cancerous. In the pancreas a few softened spots. Other organs were healthy, except the stomach, which was much dilated and filled with fluids. (This supposed to be the cause of the gurgling "glou-glou" sound.)

28	J. R. McClurg. Medical Examiner, Phil., 1851.	50; male.	Eight months.	Fullness in epigastric region, and to the touch the feel of a thickened condition; decided pulsation in the epigastric region; great tenderness there on pressure.	Pain commenced early, and was constant and very intense; sometimes most in the region of the stomach, then in the left side, or in the back; no pain in the right side, excepting a month or two before death.	None.	Costive.	None; (skin dry, of a straw color; countenance had a wild, anxious look.)	Progressive debility and emaciation.	Ascites and anasarca four weeks before death.	Anorexia; feeling of oppression at epigastrium; tongue covered with a thick, yellow coat.	Great restlessness: patient unable to lie in bed; also inability to stand erect; bent forward so as to relax abdominal muscles; at one time fever; pulse, 90. In the last month of the disease hiccough became an almost constant symptom. The patient thought his disease had been produced by having carried, two years previous to his last sickness, a load of coal in a tub, which pressed hard against the stomach, giving him pain at the time, and ever after some uneasiness or a tired feeling at the epigastrium.	Pancreas.--The whole of the organ was converted into a cancerous mass, which also embraced the smaller curvature of the stomach, surrounded the solar plexus, the aorta, and accompanying vessels, and adhered to the diaphragm, the liver, the arch of the colon, and omentum. Liver was enlarged, hard, and "tuburculated;" gall-bladder healthy.

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29	Dr. Kneeland. New York Journal of Medicine. Vol. xi. 1853.	64; male.	About eighteen months.	Hard tumefaction in epigastric region; not tender on pressure.	"Constant deathly distress," confined principally to epigastric region; increased by nourishment; suffering, indeed, much greater when he did not reject whatever he swallowed.	Present, and as an early symptom; matter vomited colorless; of a saltish taste.	Constipated.	No jaundice.	Extreme emaciation; (skin of a dingy, pale, bloodless hue.)	Not mentioned.	Continual vomiting of food; occasional vomiting and sinking sensation about the stomach were very early symptoms.		Pancreas enlarged and hard; adherent to stomach; converted, with the portion where it was adherent, into one mass of scirrhus, of a uniformly dull or yellowish-white color, and of a homogeneous structure. Liver, spleen, and kidneys anæmic in appearance. The mucous membrane of the stomach had retained its normal structure; the viscus was much contracted.
30	John S. Antrum. Association Med. Journal, 1855.	52; female.	"Several years."	Indistinct fullness in epigastric region. in the later stages; also, indistinct dullness on percussion; at one time a circumscribed spot, an inch square, below the edge of the liver, tender on deep pressure, was noticed.	Continuous epigastric pain, as a very early symptom; at first relieved by change of air and tonics; later more severe, and extending to the right groin, and to the back.	Present, but rarely, and only as the disease advanced, and then appeared to arise from distension by wind; never a black appearance of vomit.	Rather irregular and irritable; stools natural, except when deficient in bile; nothing like fat passed, not even when cod-liver oil was taken.	Never marked; skin gradually became slightly yellow and muddy.	Increasing debility and emaciation; had had attacks of debility for several years.	Not mentioned.	None. Food readily digested; uncontrollable flatulence, but not dependent on taking food; pain in the earlier stages relieved by taking food; seemed more a sensation of exhaustion.	Abdomen became, in the last stages, tympanitic; right thigh became swollen, and femoral vein tender in several parts of its course. Death took place from inanition.	Pancreas.—Its head enlarged to the size of a goose egg, by a cancerous deposit in its tissue. Similar deposits in the smaller end, and in neighboring lymphatic glands. Pancreas not adherent. Pyloric end of stomach, near pancreas, thickened by a deposit of cancer, apparently colloid; deposit ceased abruptly at the pylorus; dark, black, slimy mucus, as is often ejected in cases of cancer of the stomach, covered the pylorus. Other viscera, as far as examined, healthy.
31	Haldane. Month. Journal of Med. Science, Edinb., 1854.	Male age not stated.	Seven months or upwards.	None.	Not mentioned.	Not mentioned.	Costive; clay-colored stools during jaundice; previously dark and scybalous; not fatty.	Intense, but occurring as a late symptom.	Present, and both continually increasing.	No anasarca; but ascites, with much tympanitis.	For seven months.	Gradually, before death, sank into asthenic coma.	Pancreas cancerous, (by microscope) but disease was not at the head of the organ, which was healthy. Retrograde cancer-spots in liver, and in the mesentery. Gall-bladder much distended; ductus communis compressed, and involved in the disease.

32	Dr. Wilks. Transactions of the Pathol. Society of London, Vol. vi. 1855.	56; male.	Six months.	Abdomen felt rigid in the last stages of the disease, but no tumor perceptible.	In middle of back and in abdomen, varying in intensity; very severe at first; became dull, and lessened much as disease advanced.	None.	Obstinately constipated, but stools throughout normal.	None.	Emaciation steady and progressive; became extreme; debility not specially mentioned.	Slight ascites, as a late symptom.	Appetite bad, but not capricious.	Patient, when first seen, did not appear very ill.	Pancreas changed into a cancerous mass; in part fibrous and hard, in part gelatiniform. The head still retained some healthy structure. The duct, close to the duodenum, was pervious, but quite impervious when running through the diseased gland. The pancreas was closely adherent to the duodenum and stomach. A few of the gastric absorbent glands were partly infiltrated with morbid matter, but they were not connected with the diseased pancreas. The omentum was drawn up, and converted into a hard cancer. In it, and in the pancreas, were found well-marked cancer-cells. No cancer existed in other parts of the body.
33	Dr. Da Costa. Proceed. of Path. Society of Philadelphia, p. 8; or, North Am. Med.-Chir. Review, January, 1858.	45; male.	Seven months.	None.	Pain across epigastrium, but not severe; extending to back.	Occasional, and not at commencement of disease.	Constipated; dejections are clay-colored, not fatty.	Very marked; occurred rather early in the disease, and continually increased.	Both present, but neither to a marked degree.	None.	Very slight symptoms of indigestion.	Hemorrhage from the lungs.	Pancreas enlarged; its head and surrounding glands converted into a hard tumor, which, microscopically examined, proved to be a cancer; middle portion in a state of fatty degeneration. Pancreatic duct pervious. Liver enlarged, green and mottled, with irregular and large pigment masses in its structure; hepatic and common duct much compressed; cystic duct dilated; a few cancer-spots in liver; other organs healthy. All the cellular tissues were extremely yellow. The lower lobes of the lungs were voluminous and engorged; the seat of the hemorrhage could not be detected.

Case	By whom and where reported.	Age and Sex.	Duration.	Local Signs.	Pain.	Vomiting.	State of Bowels.	Jaundice.	Emaciation and Debility.	Dropsy.	Dyspeptic Symptoms.	Other Symptoms, and Remarks.	Post-mortem Appearances.
34	Dr. Agnew. Proc. of Path. Society, p. 84, or North Am. Med.-Chirg. Rev., July, 1858.	56; male.	One year; previously in good health.	None.	Pains of flying character, passing through abdomen to the right shoulder; no pain on pressure; feeling of fullness and weight in epigastrium.	Present; matter rejected was of a glairy character, and very offensive. Nausea was among the earliest symptoms, but vomiting occurred only as the case progressed.	Very torpid; evacuations clay-colored; sometimes greenish.	Very slight, if any; (countenance pale and bloodless; color of skin indicating a cancerous cachexia.)	Both markedly present; weight, when first attacked, 250 lbs.; at time of death, 120 lbs.	None.	Signs of indigestion were the first marked symptoms; nausea; flatulency; a feeling of fullness over the stomach.	Troublesome hiccough; he was a good liver, and had, for a long time, had slight dyspeptic symptoms, which became, rather suddenly, much aggravated; at the time they became so he was much depressed in spirits.	Pancreas enlarged to four times its size; its structure replaced by cancerous masses; also a deposit of cancer at cardiac orifice of stomach, (both examined with the microscope;) liver cirrhosed; the ducts pervious; kidneys also seemed granular. The enlarged mass of the pancreas pressed on the thoracic duct.
35	Dr. Bennett. "Clinical Lectures," p. 449.	50; male.	One year; previously in good health.	Tumor in epigastrium perceived by patient himself three months and a half before death; tumor very painful on pressure; could be moved upwards and to the right. It was distinctly felt, two inches below the ensiform cartilage, and three above umbilicus.	Pain severe and constant; is epigastric, but not increased on taking food.	Present; occurred at first occasionally; later, became constant; he vomited matter resembling coffee-grounds, mostly one hour to an hour and a half after meals.	Not mentioned.	None.	Both present and progressive.	None.	No appetite; pyrosis as a very early symptom; food could not be retained on stomach; thirst only occasionally; tongue and gums dry.	Tenderness over liver; pulse small and weak; slept but little; urine normal; prolonged expiration, feeble and harsh respiratory murmur in lungs.	Pancreas.—Its head involved with the surrounding mesenteric glands, and a mass compressing the pyloric extremity of the stomach in a cancerous tumor. This mass was seated in the smaller curvature, and projected into the stomach. The remaining portions of the pancreas were healthy, but the duct was obliterated. A cyst in the right kidney; liver felt hard and nodulated; lung presented gelatinous-looking masses, which, microscopically examined, proved to be cancer.

36	Dr. Bennett. "Clinical Lectures," p. 462.	50; male.	Eleven weeks.	None.	Gnawing pain in epigastrium, (was the first symptom of disease:) also acute grinding pain in the region of the liver.	No vomiting; food excited nausea.	Constipated stools of a lead color: at times dark-green.	Yellow tinge of skin appeared four weeks after first symptoms; jaundice steadily increased; finally skin became of a dark, green tint.	Emaciation not mentioned, but progressive exhaustion.	Not mentioned.	Loss of appetite; tongue slightly furred, moist, but became dry; considerable thirst; food excited nausea.	Two weeks after he felt gnawing pain, was overworked: drowsiness, loss of appetite, anorexia appeared, soon followed by jaundice.	Pancreas—right extremity converted into a cancerous tumor, rest of the organ indurated; contained a few small cysts. The portion of the common duct which passed through the tumor barely admitted a small probe. Behind this constriction the common, cystic, and hepatic ducts, were greatly enlarged; liver of a green color; its bile-ducts dilated; some cancerous spots in liver, as also in kidney; gall-bladder distended, containing two gall-stones, supposed, by their passage from the liver, to have occasioned the grinding pain over the organ.
37	Case communicated to me by Dr. Harris.	44; colored woman.	Upwards of thirteen months.	None.	Constant, dull, and extending over abdomen.	Of watery fluid, depositing a blackish sediment; never of food; was not as constant as disease advanced; indeed, at one time ceased for several months.	Regular.	Yellowish conjunctiva, but not early in disease, and never very marked.	Both present and progressive.	None.	Present from the first, increased with the disease; loss of appetite marked; tongue remained clean throughout; some flatulency.	Died of exhaustion.	Pancreas converted into a cancerous mass the size of a fist, and having the general characters of encephaloid. Its right extremity was mainly diseased; the liver was slightly enlarged, had a few small, cancerous tumors on its external surface. The stomach was perfectly healthy, so were also the other abdominal organs; common duct, pervious.

American Progress of Medical Science.

REPORT ON MATERIA MEDICA AND THERAPEUTICS FOR THE YEAR 1857.

By JOHN BELL, M.D.

PART I.

A REPORT on American contributions to Materia Medica and Therapeutics for the year 1857, may, appropriately enough, be preceded by a brief notice of the labors of American writers in these departments.

The first attempt towards the formation of an American Materia Medica, by an investigation of the medicinal properties of our indigenous plants, was made by a learned German, Dr. Shœpf, who visited this country about the year 1786. In 1787 he published the result of his labors in a small volume, entitled *Materia Medica Potissimum Regni Vegetabilis.* This work was followed by a paper which appeared in the *Amœnitates Academicœ*, (Vol. IV. Dissert, LXXII. p. 522,) under the title of *Specifica Canadensium*, in which Koel, the author, enumerates and describes a few indigenous medicinal plants. Among our home contributions in this line, priority must be given to a paper read before the Philadelphia Medical Society, bearing the title of "Collections for an Essay toward a Materia Medica of the United States," by Dr. Benjamin Smith Barton. A second edition of this address appeared in the latter part of the year 1801, with the addition of notes and an appendix, and a third in 1810, a copy of which is now on our table. In this last is included a second part, which bears the date of 1804. Dr. Barton early announced his intention "to publish a series of engravings of the principal medicinal vegetables of our country," in a quarto form, nearly of the size of the plates in Dr. Woodville's Medical Botany. This design was never carried into practice by its author, and the execution of it was left for his nephew, Dr. Wm. P. C. Barton. Much zeal was manifested by several of the alumni of the medical department of the University of Pennsylvania, in the closing years of the last, and the first five years of the present century, in their investigations into the properties and therapeutical value of different indigenous plants. The results were, for the most part, given in the inaugural theses of the several experimenters, who had been invited to undertake what they did, mainly by the promptings and encouragement of Dr. B. S. Barton, then Professor of Materia Medica and Botany in the University.

The curiosity of our readers will, perhaps, prompt them to ask for the names of the indigenous plants now referred to, but without their caring for repetition, in each case, of the formal title of the inaugural essay. Under this supposition, we give the following list of the subjects of the essays, and the names of their authors: — 1. *Cornus Florida*, 1802; 2. *Kalmia Latifolia* and *Angustifolia*, 1802; 3. *Laurus*, a native species of, 1804; 4. *Liriodendron Tulipfera*, or Poplar Tree, 1802; 5. *Lupulus Communis*, or Common Hop, 1805; 6. *Magnolia*

Tripetalia and *Magnolia Acuminata*, 1806; 7. *Magnolia Glauca*, or Common White Laurel Tree, 1802; 8. *Persimmon*, 1792; 9. *Phytollacca Decandra*, (Poke Weed,) 1795; 10. *Prunus Virginiana*, or Wild Cherry Tree, 1802; 11. *Arbutus Uva Ursi*, *Pyrola Umbellata* and *Maculata*, 1803; 12. *Rhus vernix*, *Rhus radicans*, *Rhus glabrum*, or Poison ash, Poison vine and common Sumach, 1798; 13. *Sanguinaria Canadensis*, or Puccoon, 1803; 14. *Polygala Senega*, 1803; 15. *Spigelia Marilandica*, or Indian Pink, 1802; 16. *Datura Stramonium*, or common Thorn Apple; 17. *Nicotiana Tabacum*, or common Tobacco; 18. Effects of Tobacco Fumes on the System, and their Use in cases of Suspended Animation from Submersion, 1805. The authors of the above essays are respectively—1. John M. Walker; 2. George G. Thomas; 3. Austin Brocker; 4. Patrick Kerr Rogers; 5. Wakeman Bryarly; 6. John Floyd; 7. Thomas D. Rose; 8. James Woodhouse; 9. Benjamin Shultze; 10. Charles Morris; 11. S. Mitchell; 12. Thomas Horsfield; 13. William Downey; 14. Thomas Massie; 15. Hedge Thompson; 16. Samuel Cooper; and 17. Edward Bradford.

In the same year (1817) there were begun to be published two works, in numbers, illustrating indigenous Materia Medica; the one by Dr. Wm. P. C. Barton, of Philadelphia, the other by Dr. Jacob Bigelow, of Boston. The former was called "Vegetable Materia Medica of the United States; or Medical Botany." The work consists of two volumes, quarto, with sixty plates of colored engravings. Dr. Bigelow's work is in three volumes, large octavo, and gives the colored engravings of sixty plants. It is entitled "Medical Botany, being a collection of the native and medicinal plants of the United States." Rafinesque's Medical Flora made its appearance about this time. The next work, illustrative of Medical Botany of a later date, which includes both indigenous and exotic plants, is that by Dr. Joseph Carson. Its author declares his object in preparing it, is to present the botanical history of the Materia Medica. All therapeutical and pharmacological details have been omitted. The work appears in five volumes, quarto, with a hundred colored illustrations. Dr. R. E. Griffith is the author of a volume on Medical Botany, illustrated with wood-cuts. Of anterior date to any of the works now mentioned, was Thacher's New American Dispensatory, 1810. To the labors of Dr. Ives, of Yale College, is the country indebted for improvement of our indigenous Materia Medica. Dr. Tully has been an industrious worker in the same field, as we see by his essays on the *Sanguinaria Canadensis* and *Scutellaria Lateriflora*, and since in his systematic treatise on Materia Medica, or Pharmacology and Therapeutics, now in course of publication, in numbers. Much useful information on the curative powers of indigenous plants of the United States will be found in the pages of the "New York Medical Repository," and of the "New England Medical and Surgical Journal." Reference must be made, in this connection, to the second volume (1849) of the Transactions of the American Medical Association, containing a Report on Indigenous Medical Botany by Dr. N. S. Davis, and more especially the carefully elaborated Reports on the Indigenous Medicinal Plants of South Carolina by Dr. F. P. Porcher, and on the Indigenous Medical Botany of Massachusetts by Dr. S. W. Williams, members of the committee of which Dr. Davis was chairman. In the seventh volume of the Transactions of the Association (1854) will be found a supplementary Report by Dr. Porcher, on the Medicinal and Toxicological Properties of the Cryptogamic Plants of the United States. At an earlier date (1821 and 1824) appeared a work in two volumes, by Stephen Elliott, LL.D., entitled "A Sketch of the Botany of South Carolina and Georgia." The systematic works on Materia Medica and Therapeutics, by American authors, constitute a full proportion of the Medical Literature of the country. The authors have been, with scarcely an exception, lecturers in medical schools, and the volumes issued by them are, in some cases, nearly the same as their prelections. Mention may here be made, in the order of their first appearance, of the treatises by, respectively, Drs. Chapman, Eberle, Dunglison, Frost, Harrison, Paine, J. R. Beck, Thos. D. Mitchell, and Wood. The Dispensatory of the United States of America, by Drs. Wood and Bache, as a comprehensive work on Materia Medica and Pharmacy, addresses itself to physicians, druggists, and apothecaries. Dr. Beck, in addition to his volume of posthumously published lectures, edited by Dr. Gilman, is the author of a small volume of an earlier date, entitled "Essays on Infant Therapeutics." Dr. John Bell, author of the present Report, has issued a "Dictionary of Materia Medica and Therapeutics," based on Brunde's Dictionary of Materia Medica and Pharmacy. The therapeutical additions and changes are numerous and radical, and include a notice of the medicinal value of the chief indigenous plants of the United States. Dr. John B. Biddle has sent out a small volume, bearing the title of a "Review of Materia Medica," designed for the use of students. Under the double head of Materia Medica and Hygiene, mention may, properly, be made here of three several works by Dr. Bell, viz.:—1. Baths and Mineral Waters; 2. Baths and the Watery Regimen; 3. Mineral Springs of the United States and Canada. On particular mineral springs, or on those of certain regions, we have the writings of Drs. Steele, North and Allen, on the Springs of Saratoga, and of Drs. Moorman and Burke on those of Virginia.

Dr. Beck, in his work on Infantile Therapeutics, to which reference has been made above, contests the claim advanced by English writers in favor of Dr. Robert Hamilton, of Lynn Regis, as the first to make free use of mercury in inflammatory complaints (1783.) This honor is, he thinks, mainly due to American physicians. It was in attempting to arrest the ravages of a dreadful epidemic (putrid sore throat) which prevailed in different parts of New England in 1735 and '36, that mercury was first used by Dr. Wm. Douglass, an eccentric physician of Boston. The preparation which he used was calomel. "This distemper did not well bear any other evacuations but mercurials," says Dr. D. The mercurial practice was systematized, and carried to the greatest extent by Dr. Jacob Ogden, a respectable physician of Long Island. About the middle of the last century, it was in common use in pleurisy, pneumonia, inflammatory rheumatism, and other phlegmasiæ. "The common practice," writes Dr. Beck, "was to give it in large doses when used as a cathartic, and when given as an alterant, or to affect the system, in doses of one or two grains; and this was combined with camphor, antimony, or opium, according to circumstances—a practice precisely similar to that of the present day." Dr. Thomas Bond, of Philadelphia, was the first to introduce mercury into general use in the practice of medicine. "He called it, emphatically, a revolutionary remedy, and presented it in all cases which resisted the common modes of practice. He gave it liberally in the cynanche trachealis. He sometimes cured madness, by giving it in such quantities as to excite salivation." Dr. Bond's professional life extended from 1734 to 1773.

The most valuable contributions to the Materia Medica, on the part of American physicians, are the Ergot of Rye, and Ether inhaled as an anæsthetic. For the introduction of the first into regular practice, with the view of aiding the parturient efforts of the female, we are indebted to Dr. John Stearns, residing at the time (1807) in Saratoga, New York. For the practical application of Ether for the relief of pain and suspension of sensibility by its inhalation, the world must acknowledge its obligations to Dr. Morton, a dentist of Boston, who was aided in his investigations and early trials by the advice and countenance of Dr. C. S. Jackson, of the same city. Other anæsthetics have been discovered since then and used in Europe, but no one of them imperils the life of the patient in so small a degree as ether. On the other hand, scarcely a month elapses without our hearing of a death caused by the inhalation of that favorite anæsthetic—chloroform—to produce the desired insensibility before an operation.

So soon as a few observations of facts or phenomena of a kindred character are made, the mind feels the necessity of classifying or arranging them methodically, under one head, so that, by a kind of mnemonics, the general title will suggest the separate particulars, and thus the memory is saved from the continual strain of calling up each individual fact, and its concomitant attributes or circumstance. Certain resemblances in physiognomy or in properties, are made the groundwork of the classifications in natural history; as in the cases of certain botanical and zoological classifications. Similar attempts, on a like foundation, have been made, to classify the functions of the several parts of the living organism in health, and the numerous aberrations of the functions from this standard in disease. So, also, we have classifications of the articles of the Materia Medica, which, for the most part, are framed on the basis of their direct sensible and physiological operations on the several organs of the economy. This mode of proceeding would be very convenient, and undoubtedly useful, if such an article produced a unit effect, or acted on one organ or on one organic apparatus only; but, so various are its immediate effects, that we soon find our classification to belong to Therapeutics, rather than to Materia Medica, and that under one division of the former we have several articles of the latter. and often, one of these articles obtains a place under different therapeutical divisions. And again, there are several articles of the Materia Medica which are of great power and efficacy, but the *modus operandi* of which on the organism is of such an occult kind, and so little, if at all, manifested by either evacuating, or exciting, or depressing effects, that we are unable to enlist them under any of the therapeutical divisions in the ordinary classifications, unless, in some cases, it be under the very general term of *alteratives*, which is itself an acknowledgement of a difficulty evaded but not overcome. On the present occasion, we, in common with all who teach or write on Materia Medica, feel this embarrassment; and if we attempt a classfication at all, it can have no claim to be considered as a scientific one, but only as at best an aid to memory.

We begin our report on the American contributions to Materia Medica and Therapeutics for the year 1857, with certain articles belonging to the class of

SEDATIVES.

Of these, the article which most engaged attention during the year, and the medicinal effects of which make the nearest approach to novelty, is the indigenous plant known as

Veratrum Viride—American Hellebore.—The peculiar properties of this plant were known to the Aborigines; but the first regular account of its therapeutical value and application, was furnished by Dr. Charles Osgood, of Providence, in a paper contained in the *American Journal of the Medical Sciences*, vol. xvi. He pointed out, among other effects, the remarkable diminution of the heart's action, and reduction of the pulsation at the wrist to thirty-five beats in a minute. Dr. Tully, of New Haven, also experimented with the veratrum, and recommended it as a substitute for colchicum. It was thought, at this time, to be best adapted to gouty, rheumatic, and neuralgic disorders. So soon as we begin to speak of the immediate effects following the administration of this substance, we find an illustration of the remark made above, on the difficulty of classification in Materia Medica. The Veratrum Viride is used in substance, tincture, and extract. Its first effect, if a dose of four to six grains of the powder, or one to two fluidrachms of the tincture be taken, is to cause vomiting. At the present time, renewed prominence has been obtained for the veratrum, by the iterated efforts of Dr. W. C. Norwood, of South Carolina, whose zeal would have been more generally appreciated, but for the imputation of self-advantage or profit, to which he exposed himself by intimating, if not directly claiming, a superiority for his preparation of the tincture over that of others. A severe and apparently a too well deserved rebuke for this and another and more open specimen of quackery on the part of Dr. Norwood, is administered by Dr. Taliaferro, in the *Atlanta Medical and Surgical Journal.*

The veratrum viride, although most probably possessing certain constituents in common with the *veratrum album*, differs from this latter in one essential particular, viz.: in its exerting little or no action on the bowels, as an aperient. Dr. Horace Green (*American Medical Monthly*, Feb. 1, 1857,) under the head of "Selections from Favorite Prescriptions of Living American Practitioners," assures us, when speaking of the veratrum viride, that, if employed in the early stage, before the occurrence of organic lesions, it is peculiarly adapted to the treatment of pneumonia, pleurisy, rheumatism, typhoid fever, and pulmonary inflammation; and in the phlegmasiæ generally it is regarded as more or less valuable. It has never failed in his hands, when properly administered, to diminish arterial action. In one case of tuberculosis, a pulse of 120 was reduced to 58 beats in a minute, and kept steadily at that point day after day. Dr. Green adverts to the favorable experience of Dr. Carnochan in the use of this remedy, in the Emigrants' Hospital, New York. In one case, a pulse of 130 was reduced to 68 beats in fifteen hours; and in another of articular rheumatism, by the exhibition of the tincture, in doses of from five to eight drops every three hours, a pulse of 120 was reduced to 30 in fifteen hours.

The saturated tincture—the form in which the remedy is directed by Dr. Norwood—is "made by macerating eight ounces of the dried root in sixteen ounces of alcohol for at least two weeks."

With a view of procuring more entire sedative and antiphlogistic effects, Dr. Norwood advises a combination of the tincture of veratrum and syrup of squills in equal parts. He directs of this mixture, from four to six drops for an adult male, which is equal to two or three drops of the tincture, and the same of the syrup. There must be some mistake here. How is sedative action to be increased by diminishing the dose of the veratrum? and what compensation is furnished by the insignificant addition of two or three drops of the syrup of squills?

Nausea and vomiting, to an undue extreme or persistence, after the use of the veratrum viride, will be attended with prostration and great coldness of the surface. These symptoms are readily dispelled by the administration of an opiate, and of brandy or other alcoholic stimulants.

Dr. R. H. Jameson (*Trans. State Med. Soc. of Indiana*, 1857,) presents a clear and well-written statement of his experience respecting the therapeutical value of veratrum viride. He has used this agent frequently within the last three years; and he regards it as one of great power and certainty, and as applicable to many of the forms of disease which are constantly occurring. With Dr. Wood, he very justly, as we think, looks on veratrum viride as "a nervous sedative, which acts directly on that part of the nervous system governing the circulatory function, and not indirectly through a nauseant impression, as supposed by some observers." Both he and Dr. Norwood have noticed a marked diminution in the frequency of the beats of the pulse without the least nausea. Dr. Jameson declares this medicine to be an agent of great power and utility in pneumonia. He has seen its administration followed by a relief of all its distressing symptoms, in a degree equal to that which is known to follow blood-letting. It "increases expectoration, and indirectly restores the depurating functions of the liver and kidneys. In different cases it may be given with benefit either after blood-letting, or along with quinine. A good mode of prescribing it for adults is the following:—

℞.—Tinct. Verat. Vir., (Norwood's,) fʒj.
Nitrat. Potass. Pur. - - - - ʒj.
Aquæ - - - - - - - - - - ℥j.

M. Dose.—A teaspoonful every few hours, to be alternated with small doses of mercury, if deemed advisable." If the remedy fails to produce the desired relief, the dose may be gradually increased until it is doubled; but this is seldom necessary. Dr. Jameson cautions against our attempting to bring down the pulse suddenly by large doses of veratrum; and at all times we ought, he thinks, to deprecate its reduction below the normal standard.

"One considerable advantage which this remedy possesses over tartar emetic, is that it does not purge; which is often a serious objection to the use of antimonials in pneumonia." Dr. Jameson need not be told that this effect is prevented by the addition of a little opium, which is both admissible and beneficial in the phlegmasiæ generally, and which has the further advantage of preventing nausea and vomiting—results, by-the-way, which are common enough after the first or even second doses of tartar emetic; the medicine is then tolerated without nausea or a feeling of depression so long as the inflammation persists.

Veratrum viride is regarded by Dr. Jameson as "a good remedy in many cases of typhoid fever, especially where there is a dry, hot skin, parched, dark-brown tongue, and a quick, sharp pulse, with sleeplessness. Some of you will doubtless recollect that Dr. Graves recommends tartar emetic in such cases, to procure rest. Six drops may be given every four hours with nit. pot.; and if there is irritability of the stomach or bowels, a little morphine may be added. If the pulse is not reduced in twenty-four hours, the dose may be increased." Dr. Jameson does not deem it advisable to reduce the pulse of the adult lower than 70 beats in the minute.

Dr. Jameson has employed veratrum viride in two cases of puerperal fever, with what he considers favorable results. "With the verat. virid. the pulse can be as much reduced in frequency and kept down as long as the practitioner desires. With it puerperal fever may be, if not arrested at its outset, modified in its course, and effusion, that most fatal of its consequences, prevented."

Dr. Jameson regards veratrum viride as a safe medicine when administered with proper precaution. He is not inclined to attach any weight to the formidable accusations brought against it by Dr. W. A. Brown, of the tendency of its operation to procure abortion.

Our knowledge of Dr. Jameson's paper is derived from the August number (1857) of the *North Western Med. and Surg. Journ.*

Dr. H. Levezey, of Pennsylvania, (*Bost. Med. and Surg. Journ.*, March, 1857,) expresses himself, in strong terms, in favor of the veratrum. His experience enables him "to speak of it as one of the most certain sedative diaphoretics belonging to the Materia Medica, as an unsurpassed expectorant in all diseases of the respiratory organs attended with much febrile or inflammatory action, where this class of agents is indicated; and as an invaluable *arterial sedative*, for which property it stands unequaled and unparalleled among all the therapeutic agents." The preparation of the plant used by Dr. Levezey is the fluid extract prepared by Tilden & Co., in the dose of five drops, increased till an effect is produced, and it is then to be diminished.

Dr. Levezey goes on to speak of the sedative and antiphlogistic powers of the medicine, as prompt in inflammatory croup, pneumonia, or pleurisy, after the administration of calomel with ipecac. or jalap, in equal quantities, repeated every half hour or hour, until catharsis, with or without emesis, is produced. The effect of the veratrum under these circumstances would be, we might suggest to Dr. Levezey, quite auxiliary. He adds, however, that "the arterial action is more *permanently* reduced by this agent than by the lancet; the farther progress of the inflammatory process is subdued, expectoration is promoted, and a cure results often without the aid of other medicines."

Dr. G. W. Boerstler, of Lancaster, Ohio, (*West. Lancet*, May, 1857,) after some preliminary observations of a doctrinal nature, proceeds to give, in the following terms, his experience of the morbid conditions in which he found veratrum viride to be serviceable:—

"In all cases wherein it was desirable to control the perturbed state of the heart, the veratrum has never disappointed me, without one single unfavorable symptom resulting from its use. In no instance, however, have I brought down the heart's action to a normal state, without my patient complaining of some degree of nausea. After the heart's action was curbed, and the medicine continued in similar doses, no sickness of stomach resulted. I have given it to patients for two months, and never witnessed any cathartic action, nor did I observe any influence on the glandular system. As a curb to the inordinate action of the heart, it is truly *invaluable*."

Dr. Boerstler terminates his short paper by a remark which is both just in itself, and apposite to the present subject. "Believing as I do," he says, "that the *vis a tergo* of the heart, is neither the first link, nor yet the essential phenomenon in inflammatory diseases, I hold the veratrum, not as a curative agent, but as a most desirable adjuvant."

It is an undoubted fact in pathology, that the heart, in its excited action, in inflammation and fevers, is simply responsive to some local irritation or blood poisoning; and, as such, furnishes a symptom—a very important one, it is true, but only a symptom—of a pre-existing morbid process. We may, by contra-stimulants or sedatives, allay inordinate cardiac action; but we, in so doing, only abate or suspend an effect, and do not remove a cause. The sanguine advocates of digitalis, at the beginning of the present century, gave into the same mistaken pathology as the eulogists of veratrum viride do at the present time. Then, the paramount object was to lessen the frequency of the pulse, and, as an alleged effect of this, to abate or remove the hectic fever; and this result could be obtained, it was thought, by digitalis, which was found to produce such a marked sedative influence over the circulation. The idea did not present itself, that the cardiac irritation and the hectic fever are maintained by the presence of pulmonary tubercle, over which digitalis has as little control as so much water. Dr. Green, in his praise of the veratrum viride, already quoted, speaks of its reducing the pulse in a case of tuberculosis, and of the reduction, (from 120 to 58 beats in a minute,) being kept at that point day after day; but he does not, for he could not, in fact, tell of any benign influence having been exerted on tuberculosis, and still less on the formed tubercle itself.

Common inflammation, it is true, is more affected by the state of the circulation than such heterologous formations as tubercles; but this inflammation is far from being merely a hydraulic problem, to be solved by ascertaining the propelling power of the heart, and the size and resistance of the vessels acting on the circulating blood. In the reticulated capillary tissue, in which inflammation takes place, a new structure, almost a new organ, is formed. The elements for pathological study are now to be sought in the blood-vessels of the part, in the tissue, or parenchyma intermediate between these vessels, in the altered movements of the blood, and in the altered qualities of this fluid. In addition, we meet with other changes, viz.: in innervation or nervous function, and in the general circulation, and especially in the action of the heart. It must, however, be remembered, that these last are concomitant, if not consecutive, rather than essential parts of the phenomena of inflammation, which, as far as it consists in the destruction of old parts and the formation of new products, takes place in vegetables in which there is neither innervation nor circulation.

We are not yet in possession of the requisite experiments or of positive observations, to allow of our ascertaining on which of the two classes of nerves—the sensitive proper, or the nutritive, the veratrum viride exerts its chief power. Nor have we any, or scarcely any, carefully recorded clinics to show its therapeutical effects, either in shortening the entire period of inflammation, or in modifying the successive stages of this process. It is with the hope of aiding future inquirers, by fixing their attention on the real problem to be solved, that we have ventured to make the preceding remarks on the pathological conditions, which are said to be changed by such remedies as the one now under notice. As yet, we are quite unable to participate in the sanguine belief of those who, like Dr. Taliaferro, assert for the veratrum viride a superiority over the lancet in the treatment of inflammatory diseases. This writer (*Atlanta Medical and Surgical Journal*, March, 1857,) tells us: "The great advantage this remedy possesses over the abstraction of blood is, that its effects are far more decided, and not followed by the reaction which almost invariably succeeds venesection. Not only this, but the effects of the remedy may be continued for days and even weeks, successively, without unpleasant consequences; whereas a frequent repetition of blood-letting would, in most cases, be injurious." Dr. Taliaferro alleges the superiority of veratrum over antimony, as an antiphlogistic, because it is wholly free from drastic properties. Much stress cannot be laid on this opinion, until it is positively confirmed by a series of comparative trials. This qualifying remark of ours will apply, also, to another assertion of Dr. Taliaferro; that, "in the treatment of pneumonia it (the veratrum viride) is unquestionably the most reliable agent we have. When the tissue of the lung becomes inflamed, febrile excitement running high, the breathing short and quick, the proper use of veratrum soon quiets the excited action of the heart, and the blood is sent smoothly and gently along its channels." It must be borne in mind, however, that more formidable obstructions are to be overcome in the case of an inflamed lung than those interposed by an excited heart and hurried flow of blood in the vessels of the phlogosed part. The restoration of a hepatized lung to its normal condition and duty, is not resolvable into a question of *plus* or *minus* of cardiac and vascular action. But, in justice to Dr. Taliaferro, we must add that, while he claims for his favorite medicine, if freely used at the beginning of pneumonitis, the power of cutting short at once its progress, and while he places his principal reliance upon it in the treatment of this disease, he believes, still, "that important adjuvants are found in the use of opium, aconite, and calomel." He omits tartar emetic, the most reliable, in our belief, of all the drugs administered in pneumonia.

Dr. Taliaferro gives the outlines of a case of inflammation of a portion of the lower lobe of the right lung. The pulse, which was upwards of 100, full and bounding, was reduced, in the lapse of six hours, under the influence of the veratrum, to 70; the skin, from being burning hot, became "pleasant and moist." The first dose of the medicine was ten drops, it must be supposed of the tincture, to be followed, in three hours, by six, and in three hours more, by five drops, if the patient was not nauseated. After this period had elapsed, and the above good effects had been obtained, the Doctor gave his patient "six grains of calomel, combined with ten grains of *pulv. Doveri*, that he might rest well through the night." Not relying on this additional prescription, the veratrum was ordered through the night in four-drop doses. "The ensuing morning," continues Dr. Taliaferro, "we found him with no fever; pulse beating naturally; and expectoration free and easy; free from pain, except when coughing; auscultation revealed an evident subsidence in the inflammatory action of the lung. It is unnecessary to trace further the change from day to day; suffice it to say, that the veratrum was continued with no other medicine, save a Dover's powder at night, with a rapid subsidence of all diseased action; so much so, that upon the fourth day of his attack, he was able to walk upon the street; his medicine, in the mean time, being continued. The patient was never the least nauseated." The reader is left to draw his own conclusions as to the part performed by the veratrum in the curative means employed in this case.

Dr. Taliaferro, looking only to the element of accelerated circulation in typhoid fever, finds, in veratrum, a remedy not only serviceable in the commencement of this disease, but, also, in its latter stages, "reducing frequently the feeble, fluttering pulsation of the heart from 100 to 70 or 80, thereby changing an abnormal to a normal circulation." In a subsequent communication, in the *Atlanta Journal*, Dr. Taliaferro advises much care and circumspection in administering veratrum viride in hepatization of the lungs. In this state there is a much smaller surface than usual for the inspired air to produce the desired oxygenation of the blood—a process which would be still further impeded by an undue retardation of the circulating fluid in the lungs.

Dr. U. G. Mitchell Walker, of Alabama, in "A Few Words in Defence of Veratrum Viride," (*South. Med. and Surg. Journ.*,) expresses his belief that this medicine is "a great adjuvant when we wish to keep up the sedative influence produced by the lancet." It is, he thinks, particularly adapted to pneumonia, such as the disease now exhibits itself in that region of country, viz.: in its being of a type intermediate between the sthenic and asthenic, and not requiring the treatment generally deemed necessary in true sthenic pneumonia. Patients under the use of the veratrum viride are represented to "recover very rapidly, and without any of the unpleasant symptoms often noticed after active cathartics and blood-letting have been employed." So, also, by its sedative character it allays the nervous excitement in this disease, which often calls for opium. Dr. Walker advises the remedy (tincture of veratrum viride) to be administered, at first, in doses of four or five drops; or, when we have reason to believe that the patient will be easily affected, in as small a quantity as two or three drops, with a little sweetened water; the dose to be repeated every hour, with an increase of a drop at each dose, until the patient is brought under the influence of the medicine.

We go into the year preceding that of our retrospect to notice a paper by Dr. Hutchinson, of Indiana, read before the Hendricks Co. Med. Society, Nov. 1856, and published in the *Western Lancet*, February, 1857. He gives an account of five cases of pneumonia, in which the veratrum was used with success: in some after other remedies had been used; in some it was the only article.

This gentleman, like Dr. Tully, believes that "the effects of veratrum on the circulation are, to a great degree, like colchicum; the effects on the bowels are very different. In no instance have I found veratrum to purge. Like colchicum and digitalis, its powers are cumulative, frequently requiring several doses to bring down the pulse, or to produce emesis. Its influence in cleansing the liver is greater than that of any other article with which I am acquainted. It is best adapted to cases accompanied with a frequent pulse, and those in which a good deal of nervous irritation exists. The pulse produced by veratrum is *sui generis*, and when once recognized is easily recognized again. For convenience I have styled it the *veratrum* pulse. I have frequently brought down a pulse of 130 per minute as low as 60, and sometimes as low as 40. It has become fashionable to administer it in conjunction with paregoric and spirits of nitre. I do not know that the combination is of any value in aiding the effects of the remedy. The dose is easier proportioned by giving it single. It is highly spoken of in rheumatism. There is a case of cynanche trachealis cured by it, reported in the September number of the *Medical Observer.* I have no doubt of its value in this disease, from my experience with it in croup, and I am in the habit of adding it to my expectorant mixtures in bronchial irritation."

We give insertion here to a case of croup treated by Dr. Hutchinson, and related by him in the *Western Lancet.* His closing observation merits particular notice, as showing that the sedative effects of the veratrum viride are not owing to the nausea it often produces. The first stage of sedation, both in the case of this drug and of tartrate of antimony, precedes the nausea, which is, in fact, an effect,—a symptom, and not a cause.

"March 23, 1855, 8 o'clock A.M.—Was called to A. Greeson, aged three years; patient had been hoarse for the last two days. Breathing whistling; voice stridulous; pulse very frequent, at least 150 per minute, and quick. Tonsils covered with exudations of lymph. Gave alum emetic, according to the practice of Dr. Meigs; left four doses more, to be given every twenty minutes, till emesis took place. Called again in two hours; he had taken all the alum without vomiting; pulse still frequent; breathing whistling; stupor approaching. Gave tinct. veratrum viride, five drops, every twenty minutes. Returned to see him again in two hours; had taken four doses of veratrum; slight vomiting was produced; pulse not so frequent; breathing a little easier; still inclines to stupor. Abstracted four ounces of blood from a vein at the ankle. Continued the veratrum every half hour. Called again in two more hours; pulse down to 60 per minute; swelling of tonsils subsiding; breathes easy; does not incline to stupor; takes notice of objects around him; has not passed any urine for nearly twenty-four hours. Gave calomel and squills, of each one grain; continue veratrum, five drops every hour.

"Called again at 12 o'clock midnight. Has vomited a little; pulse 80, soft; breathes easy. Gave calomel to move the bowels, and continue veratrum.

"24th—8 o'clock A.M.—Nearly free of croup symptoms; continue veratrum in smaller doses. Give cathartic and diuretic, as he has passed but a few drops of urine. He required no further treatment, as he rapidly recovered, and is yet living.

"The most remarkable circumstance in this case was the quantity of veratrum administered, with the happiest result. He took, in twenty-four hours, one ounce of the tincture, without producing vomiting to any extent; but it speedily reduced the inflammation of the throat and air-passages. I have since used it in other cases of croup, with the best effects."

Dr. C. H. Murphy (*St. Louis Med. and Surg. Reporter*, March, 1857,) states that he has used veratrum viride in twenty-one cases of pneumonia, without failing in any instance to produce its sedative effects, and with the loss of but one case, and that he attributes to "exposure to cold forty-eight hours after the pulse had been reduced to 60 per minute." Dr. Murphy relates the outlines of three cases of this disease, in the first of which he began the treatment, on the second day, by directing "calomel and ipecac., each one grain, every three hours until it acts, together with tinct. veratrum viride, gtt. vii., every three hours, alternately. The dose of the latter to be increased one drop in the dose until nausea is induced." Calomel and opium, in doses of one half the strength just indicated, and the tincture were continued on the third day. On the fourth day (of the disease) the veratrum was continued, as it was on the two following days. On the seventh day of the disease, and the sixth of treatment, convalescence was established, and the veratrum was discontinued. In its place tincture of the *Sanguinaria Canadensis* was given three times a day. The second case of pneumonia, consisting of inflammation of the inferior lobe of the right lung, had lasted five days, and had been treated with calomel and ipecac., and blisters, before it came under Dr. Murphy's charge. He directed calomel and ipecac., of each one grain, every three hours until the bowels were moved; and, alternately with this, tincture of veratrum viride every three hours, increasing one drop each dose until it nauseated. On the following day, the dose of veratrum was diminished, and in the afternoon it was increased. "The patient sleeps but very little." On the next day there was great relief; the sleep had been good. The medicine was continued. The same report of amelioration and treatment on the succeeding day. Convalescence began on the seventh day of treatment by Dr. Murphy, and the twelfth day of the disease. In the third case, after the use of calomel fifteen grains, and jalap three, divided into three powders, one to be taken every two hours, the veratrum was the only therapeutical agent employed, except a blister to the side. The dose of the tincture was eight drops every three hours, increasing one drop each dose till it nauseated. The medicine was increased by the next day, to sixteen drops at a dose, and, in the following one, reduced to eight drops, at which it was continued. On the seventh day of treatment, the patient was pronounced convalescent.

In the number of the journal just quoted from, we find an account of the treatment of seven cases of acute inflammation, by Dr. Watson, originally inserted in the *Nashville Journal*. In all of these, of which five were of pneumonia, the veratrum was given with satisfactory results. The first patient, a negro girl, "aged 17 years, has been successively bled, cupped, cauterized, blistered, etc., with but slight benefit. Believing that she would soon die, unless the arterial excitement could be subdued," Dr. Watson "gave 12 drops of the tincture of veratrum. In ten or fifteen minutes there was a profuse secretion of saliva, and in half an hour, vomiting, and reduction of the pulse from 130 to 60 per minute. The retching and sickness lasted two hours, after which there ensued a copious bronchial secretion. On the following day, the pulse had regained its former frequency. The tincture of veratrum was ordered to be repeated every two hours; but the second dose having produced the desired effect, the medicine was discontinued. From this time the patient rapidly recovered; it being only necessary to repeat the medicine on one other occasion."

W. Thomas, aged 25 years, had suffered from an attack of acute rheumatism; "had used the lancet, colchicum, opium, lemonade, etc., etc., with but little benefit; gave the veratrum with the highest success. The medicine was continued for three successive days, after which time he was relieved."

In the case of a child, aged 18 months, who was seized with pneumonia, tartar emetic, the warm bath, calomel, etc., had been used, but with what results is not stated. Dr. Watson "gave one drop of veratrum; waited two hours; gave three drops. Patient became calm, and slept. The pulse was reduced from 140 to 40 per minute." The Doctor was alarmed, but in due time "the pulse rallied, and in eight or ten hours the effects had entirely passed off; the remedy was repeated in two-drop doses on two other occasions. The child recovered rapidly." In another case, in which the pneumonia had lasted two days before treatment was begun, Dr. Watson prescribed the tincture of veratrum in two-drop doses, every two hours, "increasing [to?] three drops upon each repetition." After the third dose, free and repeated vomiting was produced, with the ejection of large quantities of mucus. The sickness of stomach having subsided, a copious diaphoresis came on, accompanied with free expectoration, and the patient rapidly recovered without any further treatment. The age of the patient was 26 years.

Case third was relieved by the same means, with equal promptitude, after a second dose. In one of the cases of pneumonia, the pulse proved intractable under the use of the lancet, nor could nausea be caused by tartar emetic. Equally unavailing was the tincture of veratrum, in doses of 16 drops repeated every two hours, in three successive days, without the slightest effect. The patient's recovery, as Dr. Watson thinks, was due to a copious bleeding resorted to on the seventh day. He does not seem to be aware of the true antiphlogistic or contra-stimulant effect of tartar emetic, in his looking for its nauseating effects as a means of abating inflammation. Need we say that this medicine acts most beneficially in cases of phlogosis, without its giving rise either to nausea and vomiting, or to purging, or to an increase of any secretion? Its being tolerated in this way, is both an evidence of the safety of continuing its use in increased quantities, and of the persistence of the inflammation. So soon as this morbid state is removed or greatly diminished, the toleration of the stomach for the tartar emetic ceases, and nausea, vomiting, and sometimes catharsis supervene.

Dr. D. L. M'Gugin, of Keokuk, Iowa, (*Iowa Medical Journal*, No. 1, 1857,) adduces his experience of the efficacy of veratrum viride in four cases of pneumonia in measles, and in two cases of acute rheumatism. In the first case of pneumonia of the lobular variety, in a little girl of a nervous temperament, calomel and tartar emetic had been used for several days without lessening the action of the heart. The tincture of the veratrum was then ventured on, at first in two-drop doses in syrup of squills, and afterwards in four drops every three hours,—with the effect of sinking the pulse from 140 to 100 beats in the minute, and of increasing the expectoration, moderating the cough, and bringing out moisture of the skin. "The tincture was continued a few days, during which the pulse was controlled by it, and the patient rapidly convalesced.

The next case was that of a stout Irish girl, aged 14 years, laboring under double pneumonia. The pulse was 130. Four drops of the veratrum tincture were given at first, and six drops afterwards. In twelve hours the pulse was reduced to 86. Great relief of all the disturbed functions was produced. A suspension of the use of the tincture during the night, was followed, toward morning, by renewed frequency and quickness of the pulse; but on fresh recourse to the medicine, the desired reduction was obtained. After an attack of six days' duration, the patient began rapidly to convalesce." The third case was that of a young man who had suffered from a previous attack of pneumonia of the right side. He was afflicted this time to such a degree, "that his face was not only livid, but rather cyanotic." Pulse, 130; respiration hurried and laborious; dull sound on percussion of the right side.

The treatment consisted in the administration of calomel combined with tartrate of antimony, in small and repeated doses,—quantity and intervals not stated,—and the application of stimulating embrocations over the right side of the chest, corresponding with what Dr. M'Gugin supposed to be inflamed pulmonary pleura of the lower lobe. The bowels were moved by a mild cathartic. After this the patient was ordered tincture of veratrum viride in doses of four drops, with the same quantity of simple syrup of squills, every two hours, to be increased until nausea and vomiting should take place. In twelve hours the pulse came down to 80, and was full and soft; the skin covered with perspiration; expectoration easy and abundant; respiration twenty; the face pale; the pain on the right side in the region of the lower lobe, was relieved. Suspension of the veratrum was followed by a renewal of the inflammatory symptoms. On its second resumption, its use was continued until the patient was decidedly convalescent.

The fourth case was the more interesting, as it showed that, even in a broken-down constitution, pneumonia may be successfully controlled by veratrum viride. The dose (of the tincture) was at first four drops every four hours; and, after a period of twenty-four hours had elapsed, without the desired reduction of pulse, five drops, at intervals of three hours, were directed. Nausea and an effort to vomit followed the exhibition of the second dose, and the pulse fell to 80. "There was copious perspiration, with warm skin; the breathing, sixteen; the expectoration free, and, for the first time, rusty; the bowels were freely moved; the urine copious, and nearer the normal color, and there was an entire freedom from pain. Convalescence was ere long established; the tincture having been continued in less doses, and at longer intervals."

Dr. W. R. Handy, of Baltimore, (*Boston Med. and Surg. Journ.*, April, 1857,) gives the details of a very interesting case of pneumonia, in which, although it ended in death, the remedial effects of the veratrum viride were very conspicuous. Dr. Handy and Dr. Whitridge, who attended with him, had recourse at first to a vigorous antiphlogistic course, but without effect. It consisted of venesection, leeching, blistering, calomel, nitre, and antimony. This treatment was pursued during two weeks. "And yet," writes Dr. Handy, "with the whole we failed to act upon the skin, either in diminishing its heat and dryness, or producing the least noticeable degree of moisture. We failed to reduce the frequency of the pulse, though its hardness succumbed. We failed to destroy, or even alter the tenacity or viscidity of the expectoration." The patient was a colored woman, aged 30. Recourse was had to the veratrum, and the first dose of the tincture (Tilden & Co.'s preparation) was five drops, which was repeated three times, at intervals of about four hours. The first dose was three drops, "so that from 2 o'clock of the one day, March 24th, to 11 o'clock of the next day, (twenty-one hours,) five doses of the veratrum had been given, and the pulse fell from 120 to 94, (reduction, 26 strokes,) and the respiration was entirely free." In five minutes after the first dose, the patient was in a profuse perspiration. When Dr. Handy saw her, about three hours afterwards, and before the dose had been repeated, he "found her literally in a harvest sweat, and the sputa were more free and less viscid. The first dose did not reduce the frequency of the pulse. "In the twenty-one hours (March 25th) the veratrum was given in three-drop doses, and but five were taken. The perspiration was kept up; the pulse had fallen to 80 strokes; the expectoration all the time free and abundant; and the respiration also still free." A diminution of the dose to two drops, at intervals, in twenty-one hours, (March 26th,) was followed by a rise of the pulse to 112; but on the increase of the dose to three and to five drops, it fell to 88; and on the 28th of March to 64, accompanied with great prostration. The patient soon rallied from this under the use of laudanum and compound spirits of lavender internally, and warm applications externally; and the pulse rose at 4 P.M. to 80. On the first of April, the three-drop doses seemed to have lost their effect, and four drops were given. After the first dose of the latter, the patient became sick, and a free perspiration broke out, when the three-drop doses were resumed. Taking into account the copious and constant expectoration and perspiration, which acted as a drain and weakened the patient, and increased the tendency to a frequent pulse, Dr. Handy and Dr. Whitridge agreed to stop the use of the veratrum, and to use in its stead tincture of digitalis in ten-drop doses. One of these was given on the second of April, and three on the following day; and hydrocyanic acid, in one-drop doses, was also given, at intervals, for the cough. The pulse, so far from being reduced under this treatment, was increased four strokes in the day. The patient was evidently failing on the fourth. The digitalis was withheld on the fifth. The case terminated fatally on the following Tuesday; but on what day of the month we are not told.

Dr. Handy, in his "remarks" at the close of his narrative of the case, thinks that it shows veratrum to be a prompt and most powerful diaphoretic, and almost equally so a prompt and efficient expectorant, and a decided and reliable arterial sedative. It is a noteworthy circumstance that the pulse was reduced 24 strokes in the minute before nausea was produced. "This case enables us also to fix the dose (as far as evidence in a single case can be considered trustworthy) which may be administered with safety." The contrast between the veratrum and the digitalis is decidedly, Dr. Handy thinks, in favor of the former, although he admits that the objection may be plausibly urged that the digitalis was not good. Let us add, that a fair trial of the sedative properties of this last-mentioned article was not made by administering the tincture in such a small dose as ten drops.

In the first case of rheumatism mentioned by Dr. M'Gugin, (*Iowa Med. Journ.*, No. 2, 1857,) that of a lady, colchicum, nitre, opium, and calomel had been used. The exhibition of the veratrum was followed by a diminution of pain, and of all the other distressing symptoms. "The case came forward to speedy convalescence." The next was that of a resident of Virginia, of a plethoric habit, and who had been similarly affected several times. He was unable to turn in his bed, and the least attempt by others to move him was productive of great pain. "Calomel, opium, colchicum, and the usual remedies in such cases, were tried in a heroic manner, and yet the case threatened to outlive the allotted term of Dr. Watson, 'of six weeks' duration.'" After the veratrum had been taken, "the pulse soon gave evidence of its powers; the skin became relaxed, and the bowels poured out largely of highly offensive matter. He continued to improve, and says his disease is 'broken up.'" In this case the medicine would seem to have had an aperient effect.

Dr. M'Gugin, in giving his creed on the subject of the medicinal operation of the veratrum viride, is "convinced that, as an arterial sedative, we have no superior, and that it fills a void in the list of our therapeutic agents which we have felt; and from the want of such agent we have all along struggled." He thinks "there is much more certainty in its therapeutic action, than in a majority of the drugs now used. Its diaphoretic powers were very manifest, and its expectorant influences were observed by Prof. Allen, as well as myself, whose confidence in the *veratrum* is equally strong with my own."

Dr. Hill, of Illinois, (*North Western Med. and Surg. Journ.*, May, 1857,) relates the case of a Miss B——, with remittent fever, for which, on the first day of his visit, he directed a purgative of compound extract of colocynth and calomel, to be followed, if need be, in six hours, by sulphate of magnesia; he gave also the effervescing draught every hour, in combination with spirits of nitre and a little tartar emetic while the febrile stage lasted; and he left sulphate of quinia—doses not stated—"to be given at short intervals from the time that the intermission should occur." By mistake, the quinine was given in the course of the day without waiting for the desired intermission. One must certainly marvel at the strength of Miss B.'s stomach, which could receive without revolt, calomel, compound extract of colocynth, Epsom salts, effervescing draught, with spirits of nitre and tartar emetic, and, to crown all, sulphate of quinia—and this in one day! Dr. Hill, on calling the next morning, found that the cathartic had operated well, and also that "fever, wild and high, coursed through every vein" of his patient, with the additional features of active cerebral congestion and constant delirium. "I wanted," writes Dr. Hill, "an agent to reduce the force and volume of the circulation, and that promptly, too." He gave, with this view, "two doses, of five drops each, of the tincture of veratrum at an interval of half an hour between them, which produced emesis, followed by diminished force and frequency of the pulse; removal of the delirium and the supervention of drowsiness. Ordered three drops of the tincture, a little spirits of nitre every hour and a half till a complete intermission should occur. Next morning the patient was found sitting up in bed; pulse soft and moderately full, and about the healthy standard in frequency; skin cool, and slightly moist. A fine opportunity was now offered for the administration of quinine, by which the cure was complete."

Dr. Hill has given the veratrum in almost every case occurring in his practice, in which "a control over the force, frequency, and volume of the circulation was principally indicated," and to a considerable extent "its use has been followed by the expected effect." He has "seen it followed by alarming depression, requiring a prompt recourse to alcoholic or opiate stimulus, to prevent the apparent syncope to which the patient was hastening."

"*On the Use of Veratrum Viride in Puerperal Fever*," is the heading of the "report of a case in the service of Prof. Barker, of Bellevue Hospital, New York, by Reuben Cobb, M.D., House Physician." We insert it entire from the pages of the *American Medical Monthly* for November, 1857, as the closest clinical record yet published of the symptoms and progress of the disease during the period in which the medicine was administered:—

"Kate Short, aged 23 years, fell in labor in full term at 2 o'clock P.M., February 25th, and was delivered of a healthy child at 8½ o'clock on the morning of the 26th. Nothing unusual occurred in her labor, except that the second stage was somewhat prolonged. Placenta came away in due time, and was not followed by hemorrhage. First pregnancy.

"February 28th, at 8 A.M., she was seized with a very severe chill, followed by increased frequency of pulse, and pain over hypogastric region, extending as high up as the umbilicus. This pain was very much increased by taking a full inspiration, or by the application of pressure. Tympanites very considerable. Discharge abundant and very offensive. Pulse 140. Respirations twenty-four.

"At 1 o'clock P.M., Dr. Barker saw her, and recommended that she should be transferred to the Fever Wards, and put on the use of the Tinctura Veratri Viridis.

"At 2 o'clock P.M., after having been removed to the Fever Wards, her pulse was 140. Respiration 24. Pain over hypogastric region intense. Tympanites very considerable. Discharge abundant and very offensive. No mammary secretion. Dr. Barker requested that she should be seen hourly by one of the House Staff, and that her condition, as to the state of the pulse, respiration, and other symptoms, and the dose of the veratrum viride given should be recorded at each visit. The following is the record thus kept:—

	Hour.	*Pulse.*	*Resp.*	*Drops.*	
February 28th.	2 P.M.	140	24	10	
	3	127	22	10	
	5	140	22	10	
	6	132	12	10	
	7	120	20	10	
	8	80	20	9	Bowels moved once.
	9	75	16		Vomited a greenish colored fluid. Bowels loose.
	10	66	16	4	Vomiting ceased. Bowels moved once.
	11	65	22	7	
	12	58	13	2	
March 1st.	1 A.M.	64	52	6	Respiration very irregular. Inclined to sleep.
	2	58	25	2	Sleeping.
	3	59	21		Hiccough and headache.
	4	60	18	1	Hiccough still continues.
	5	66	20		Severe headache. Vomited a greenish colored fluid.
	6	66	21		Headache severe, and very restless. Vomited several times within last hour. Hiccough.
	7	58	20		Vomited once since last visit. Vertigo and headache.
	8	52	28		Sleeping.
	9	60	19		
	10	68	21	1	Slight hiccough.
	11	70	23	2	
	12	80	28	3	Tenderness over abdomen, marked. Tympanites somewhat diminished. Discharge dark, bloody, and very offensive.

	Hour.	*Pulse.*	*Resp.*	*Drops.*	
March 1st.	1 P.M.	80	20	4	Visit of Prof. Barker
	2	92	24	8	
	3	76	24	8	Face flushed.
	4	76	28	9	Sleeping.
	5	68	28	8	Sleeping.
	6	66	28	8	
	7	68	26	6	Slight hiccough. Bowels moved once.
	8	66	18		Vomited a greenish colored fluid.
	9	68	24		Vomited once since last visit.
	10	60	28		Sleeping.
	11	64	28		Still sleeping.
	12	66	28	2	Sleeping still.
March 2d.	1 A.M.	56	32		
	2	70	24	3	Complains of pain in left thigh. There is slight swelling, and along its internal surface, over the course of the veins and lymphatics, the tenderness is so great that she can scarcely bear the lightest touch. Tenderness over abdomen still continues. Slight tympanites. Discharge abundant, dark, bloody, and very offensive. No mammary secretion.
	3	76	24	4	
	4	65	20	3	Sleeping.
	5	78	22	8	
	6	68	22	4	
	8	64	24	4	
	9	72	24	6	
	10	64	28	2	Bowels moved once.
	11	72	28	6	
	12	70	24	5	
	1 P.M.	64	24	3	
	2	60	20		
	3	64	24		
	6	68	28	3	
	7	72	28	5	
	9	80	28	6	Face flushed.
	10	80	26	6	
	11	80	28	8	
	12	80	28	10	Sleeping.
March 3d.	1 A.M.	80	29		Vaginal discharge now ceases to be offensive. No mammary secretion. Tympanites still remains. Tenderness over abdomen still continues, though not so well marked. Tenderness and swelling in left thigh still continue.
	2	78	28	10	
	3	80	28	8	Slight hiccough.
	4	72	20	4	
	5	68	28		Vomited a greenish colored fluid. Headache. Hiccough. Bowels moved twice.
	6	64	24		
	8	60	24		
	10	68	24	5	
	11	70	24	3	
	12	76	28	6	
	1 P.M.	80	28	6	
	2	80	22	8	
	3	76	30	4	
	4	76	26	5	
	5	72	32	4	Sleeping.
	7	64	32	2	
	8	72	28	5	
	9	68	30	4	
	10	68	28	3	
	11	72	28	5	
	12	70	30	7	Sleeping.
March 4th.	1 A.M.	72	32	8	Tenderness over abdomen not so intense. Slight tympanites. Vaginal discharge now appears to be natural. Tenderness and swelling on internal surface of the left thigh now seems to be diminishing. No mammary secretion.
	2	70	30		
	3	64	28	2	
	4	64	28	3	
		60	24	2	
	6	60	28	2	
	7	60	28	2	Bowels moved twice.
	8	58	28		
	9	60	28		
	10	56	28	2	
	11	64	32	3	
	12	72	24	4	
	1 P.M.	78	32	6	

	Hour.	*Pulse.*	*Resp.*	*Drops.*	
March 4th.	2 P.M.	80	28	8	
	3	80	24	8	
	4	80	30	8	
	5	80	28	8	Sleeping.
	6	60	32		
	7	64	24	6	
	8	60	24	2	
	9	60	28	2	
	10	60	24	2	
	11	60	26		
	12	58	24		
March 5th.	1 A.M.	60	22	3	She now says she feels much better. Her countenance looks much brighter, and she appears to be much improved in every respect. The tenderness which has been so intense over the abdomen, now is scarcely noticeable. Tympanites very slight. Discharge very scanty, but normal. No mammary secretion. The swelling and tenderness on the internal surface of the thigh, in the course of the veins and lymphatics, has now disappeared altogether.
	2	68	26	4	Sleeping.
	3	60	22	2	
	4				
	5				
	6	70	30	6	
	7	64	24	4	
	8	76	24	6	
	9	76	24	6	
	10	72	28	6	
	11	64	24	3	
	12	68	24	6	
	1 P.M.	64	28	5	
	2				
	3	56	28		
	4				
	5	64	24	5	
	6				
	7				
	8	68	26	4	
	9				
	10	72	24	4	
March 6th.	8 A.M.	70	24	6	Feels well; improvement marked. No tenderness on pressure over abdomen. No tympanites. Discharge still scanty, but normal. Slight mammary secretion.
	11	76	24	4	
	12				
	1 P.M.	72	24		
	5	78	28	8	
	6				
	7	76	26		
	8				
	9				
	10	72	24	4	
March 7th.	9 A.M.	76	24		She says she feels well and hearty. No tenderness over abdomen. No tympanites. Vaginal discharge healthy. No tenderness or swelling in left femoral region. Appetite good. Bowels regular.
March 8th.	10 A.M.	76	24		Continues to improve very fast.

From this time she continued to improve, and in a short time was discharged as well and hearty as she ever was."

The *Memphis Medical Recorder* gives an abstract of an account by Dr. Gorham, in the *Medical Independent*, of the treatment of dysmenorrhœa, by the use of veratrum viride. "He begins two days before the expected period, and gives three drops of the tincture every three hours, with directions to increase one drop at each succeeding dose, and until nausea comes on, and then to reduce the dose again to three or four drops. In one case, the nausea with retching was produced by the seven-drop dose. The next case was vomited freely by the six-drop dose; and the third sickened and vomited at the two-drop dose. The frequency of the pulse was much reduced in all cases, and menstruation in each case came on at a later period by three or four days than the patient expected, but without the least pains, the relief appearing complete."

Hitherto we have introduced, without a break, the testimony in favor of the therapeutical employment of veratrum viride. In doing so, it was deemed necessary to introduce, at the same time, an account of the stages of the disease, and of the prior treatment, as well as of the remedies associated or given in alternation with the veratrum viride in each particular case. Any other fashion of therapeutical history is little better than a mere empirical record, which would be as little calculated to encourage the timid, as to restrain the too sanguine practitioner. The adverse opinions must now be noticed. Among the chief of those who take this side of the question, is Dr. W. A. Brown, of Georgia. This gentleman lays much stress, in the *Nashville Journ. of Med. and Surg.* for October, 1856, on the tendency of this medicine to cause abortion, and, in confirmation of his belief of its deleterious operation in this way, he adduces the certificates of some of his medical friends, viz.: Drs. Fielder, Matthews, and Lamar, of Georgia. Drs. Brown and Fielder go so far as to declare it to be an unsafe remedy in general practice.

Dr. Haughton, of Indiana, in the same journal, for December, 1856, meets the objections of Dr. Brown by positive counter-statements. He says, that, during a period of three years, he has used the veratrum in cases of pregnancy in all its stages, without abortion resulting in any one of them. As regards the safety and efficiency of the use of the remedy, he tells us that he has given it in all ages, from the infant to adult age, and has always obtained the desired results. If the veratrum produces abortion, it must be, as Dr. H. argues, from the nausea or vomiting, which is never necessary when we wish to obtain the expected effects from its administration. The fact, however, cannot be concealed, although it is not mentioned by Dr. H. that nausea and vomiting are quite common and not always preventible effects of the use of this medicine. At the same time, if it be really deleterious in pregnancy, so as to cause abortion, we must needs explain this result by another *modus operandi* than through gastric distress and derangement, which, we repeat, are but symptoms or concomitants of its depressing action on the nervous system, and which are, besides, such common accompaniments of the first months of pregnancy.

Dr. B. T. Newsom, of Georgia, has written a paper (*Nashville Journ. of Medicine and Surgery*, Jan. 1857,) in reply to Dr. Brown, in which he says "most positively and unequivocally, that it [veratrum viride] has been given to and taken by pregnant females so as to have its full sedative effect, and that it has never produced abortion in a single instance within my knowledge, as the following cases will show."—Of these, three were of unmarried females, two of them sisters, the one 16 and the other 14 years of age, who endeavored, but without success, to produce abortion by taking, surreptitiously, large doses (half a teaspoonful repeated in an hour) of the tincture of veratrum viride, which had been left in the house for the use of their married sister. All these cases are to the point, and we would gladly repeat the record of them did space permit.

Dr. Newsom's narrative of the cases of the two unmarried sisters is preceded by a brief statement to show, what it was necessary for us to know, how the veratrum had been used for a criminal purpose without his knowledge or participation in any way. As mentioned above, the tincture had been left with the married sister for her own use under circumstances indicated at the time. The vial containing it had been abstracted afterwards, first by one and then by the other of the two unmarried sisters, who had learned from Dr. N.'s patient the opinion communicated to her by him, that some physicians believed in its power of producing abortion.

The fourth case related by Dr. Newsom was of a married female, pregnant four months, who, on account of her husband's misconduct, wished to produce abortion. With this view she took two doses of the tincture of veratrum viride, each of thirty drops. She was made alarmingly sick in consequence, but went to her full time.

Touching the question of safety of the use of veratrum viride, Dr. Newsom says, that, since the year 1850, he has given it in numbers of almost every variety of inflammatory affections, *gastritis* excepted, and that he has never seen any *ill effects* from its use. But this gentleman is far from regarding veratrum in the light of a panacea, to be used to the exclusion of other and milder agents, which, in certain cases of inflammatory disease, would succeed equally well. Nor would he overlook the necessity of its being given with caution, and of its effects being carefully watched, "just as should be the case with every other remedial agent of like power; due regard being always had to the nature of the disease, condition, situation, and surrounding circumstances of the patient at the time." In this connection it may be deemed worth while to repeat a fact mentioned by Dr. Taliaferro. It is, of a physician of Atlanta having swallowed, through mistake, an ounce of the tincture at one draught. The consequent disturbances only amounted to extreme nausea and vomiting, and some difficulty in breathing. We are not told whether any attempt was made to relieve, by other means, the stomach from this unaccustomed and undesired dose.

After this survey of the different uses to which veratrum viride has been put in the treatment of disease, it is easy to see that much yet remains to be known concerning its therapeutical capabilities. So far, its use would seem to have been confined to febrile and inflammatory diseases; but, if we can attach any importance to the analogy which this substance bears to the class of sedatives belonging to the vegetable kingdom, we must believe that its greater range and variety of application will be found in subacute and chronic affections, in which the nervous system and nutrition are implicated,—as in the neuroses; and in scrofula and the secondary stages of syphilis, as well as in chronic rheumatism and gout. May it not deserve, in various cardiac affections, especially in hypertrophy, the epithet applied to digitalis of its being "the opium of the heart?" Beyond the sedative effects of veratrum viride we have very little accurate knowledge of its action on the organism. Experiments, both physiological and clinical, are wanting to show to what extent it acts as a diaphoretic or expectorant, although these properties are claimed for it by its eulogists. The natural tendency of a febrile paroxysm to end in sweating, and of pneumonia to relieve itself, after a few days, by copious expectoration, should make us slow to admit the efficacy of an agent as a diaphoretic or an expectorant in these diseases, merely because diaphoresis and expectoration follow its use. The operation of veratrum viride in either of these ways has yet to be tested by its trial in a much wider circle of disease, and with more guards against fallacies than have yet been had recourse to. We have heard nothing of its action on the kidneys; and in this respect it differs greatly from digitalis. As an adjuvant and corrigendum to purgatives, especially those of the resinous and drastic order, much good might be expected from veratrum viride, which in this, as well as in some other particulars, will be found to resemble hyoscyamus.

Gelseminum Sempervirens—Yellow-Jessamine.—Within the last year, additional knowledge has been gained of the medicinal virtues of another indigenous plant, the name of which heads this paragraph. For this advance we are chiefly indebted to Dr. J. A. Mayes, who, in a paper read before the "South Carolina Medical Association," and which was published in the *Charleston Medical Journal and Review* for March, 1857, has collected the observations and experience of others, in addition to his own, on the subject. In his introductory remarks, Dr. Mayes says:—"The well-known poisonous properties of the flowers of the gelseminum or yellow-jessamine would seem to indicate that the plant is possessed of powers that, if properly managed, might be advantageously employed in the treatment of many diseases." The author modestly tells us, that his essay must necessarily partake of the character of a compilation, and be dependent for its substance principally upon copious extracts from the writings of others. It is this very character of compilation which makes Dr. M.'s paper more available to our present purpose, and, in this sense, more valuable.

Dr. Cleveland, of Cincinnati, is quoted for the history of the discovery of the virtues of the yellow-jessamine. A planter, suffering under bilious fever took, by mistake, an infusion of the root of this plant, and was cured, although for a time he lost all muscular power. Dr. Batchelor (*Iowa Med. Journ.*) gives a similar account of its introduction into general practice.

The mode of preparation and administration of the gelseminum are next to be considered. It has been little used except in the form of tincture, which is thus prepared by Dr. Batchelor:—"A bottle is loosely filled with the bark of the fresh root; equal parts of whisky and water are added; and the bark is macerated for fourteen days; twenty to sixty drops of this infusion may be used at a dose, alone or combined with quinine." Dr. Mayes prefers the following formula as the one after which he prepares the tincture, and as that which is understood to be the standard of the article in the cases which are described by himself:—Four ounces of the fresh root, chipped small, to one pint of diluted alcohol; macerate for fourteen days. Of this tincture he gives to adults from twenty to fifty drops, repeated as frequently as circumstances may require. The root would seem to contain a resinoid principle soluble in strong alcohol, the ingestion of which has, we are told by Dr. Cleveland, given rise to some deaths in New Orleans. Hence, he thinks that the best menstruum is diluted alcohol, or even water, in which "the sedative property is fully soluble." The dose of the saturated tincture which he employs, is from three to thirty drops: he deems it to be "much safer and better to give small doses, frequently repeated, than to risk too large a dose of a powerful sedative medicine." On this point, Dr. Nash, of Norfolk, Va., says, that the tincture of the root, the preparation used, has a characteristic odor; and that it may be given in doses, for adults, of from ten to fifty drops, in a little water; and even one or two teaspoonsful have been administered, as it varies in strength, owing to there being no fixed standard for its preparation.

Dr. Cleveland expresses his unqualified faith in the sedative properties of the gelseminum through its operation on the spinal nerves, and, in a less degree, on the eighth pair and branches of the sympathetic distributed to the heart and lungs, by which it diminishes the force and frequency of the pulse and lowers the rate of respiration. Dr. Branch, of South Carolina, (*Charleston Med. Journ.*) remarks, that this article is "narcotic in an intense degree, but it possesses other powers—perhaps deobstruent and tonic—as well as narcotic." Dr. Batchelor gives a more extended idea of its therapeutical powers, when telling us that it is narcotic, nervine, antispasmodic, and sedative, under which last light he considers it to be superior to digitalis, sanguinaria, or even veratrum viride. It possesses the advantages of being by no means unpleasant to the taste and of not producing nausea. "In full doses it produces a sort of intoxication, languor, dizziness, double vision, inability to raise the eyelids, and, in an overdose, complete muscular prostration." Dr. Nash, of Norfolk, looks upon it "as narcotic, antispasmodic, and sedative; seemingly spending its influence, chiefly upon the sensory ganglia, the spinal cord, and voluntary muscles, and leaving unaffected the intellectual faculties. It reduces the circulation and promotes perspiration and the secretions generally, without causing nausea, vomiting, or purging, and has been given in every stage of febrile diseases." We do not see on what grounds Dr. Nash claims narcotic properties for the gelseminum, as it does not act on the brain, by inducing either sleep or stupefaction; both of which, in greater or less degree, result from the operation of a narcotic, which, moreover, excites, before it produces its sedative impression; a course of things not ensuing, as far as we can learn, on the use of the article in question. Dr. N. describes the physiological effects of the medicine to be, dimness of vision, double vision, inability to open the eyelids, stiffness of the jaws, general muscular debility and complete prostration. These, he adds, soon pass off and leave the patient comfortable and refreshed. We know not how to reconcile the "stiffness of the jaws," in the above enumeration, with the other symptoms of muscular relaxation.

Dr. Mayes assures us that he has never, in a single instance, been disappointed in obtaining a direct sedative action from the use of the gelseminum; "the patient being speedily quieted, although he may have been excessively agitated previous to its administration. Under its influence, restlessness is soon succeeded by calm repose, and the excited, frequent pulse tempers down to tranquillity. These favorable impressions must be secured, however, by a frequent repetition of the dose, as its effects are not very durable, wearing off in two or three hours. It will be found necessary to administer the medicine in doses of from twenty to fifty drops, according to the severity of the symptoms, every two or three hours, until, under the influence of more radical remedies, the disease has been permanently controlled." Dr. M.'s desire, in thus advocating the use of this medicine, is "to bring it into notice as an admirable agent for controlling irregular nervous action and bringing about in the system a state of repose favorable for obtaining the full action of other and more radical treatment." In language like this we recognize a man of good sense and observation, who, in his love of novelty, does not forget old and tried resources, and who knows that the suppression of a particular symptom is not a removal of the disease. We can refrigerate the most hot and burning skin in fever down to an almost icy coldness, but without getting control of the fever, or of the morbidly-excited and heat-generating apparatus in the organism.

In comparing gelseminum with veratrum viride, Dr. Mayes admits the greater power of the latter; but from this very circumstance he thinks that it is not so generally applicable in practice, and that it is too energetic in its action to be entrusted in the hands of even the most intelligent nurses. In his comparison of the two he mentions their relative efficacy in a case of severe pneumonia, in which the gelseminum failed to reduce the pulse under 120 during a few days' use of the article, while in the short period of a few hours it was brought down to 80 by the veratrum viride. He concludes by saying:—"From the result in this case, I am persuaded that gelseminum cannot supersede entirely the veratrum viride, but, being less energetic, it can be more safely used in general."

Dr. Cleveland remarks of the veratrum, that it sometimes produces such an amount of nausea, and even vomiting, as to preclude the farther use of the remedy; it also, not unfrequently, induces such free catharsis as to injure the patient if its use be continued. Among the numerous accounts of its effects, this is the first one in which a free action on the bowels is attributed to this article. The gelseminum, on the other hand, continues Dr. C., "while it proves a most powerful sedative to the nerves supplying the muscles of locomotion, as in the case of the planter who first took it, never seems to produce the slightest effect on the brain, or in the least degree to derange the stomach or bowels. It *does* lessen the pulse and the frequency of respiration; and while it produces a wonderful relaxation of all the muscles, it relieves all sense of pain, by acting on the nerves of general sense in a manner similar to aconite."

On the first discovery of gelseminum it was announced to be a speedy cure for intermittent fever, and it has been very largely used in the Western States in the form of various secret nostrums. Dr. Nash, already quoted, puts a high value on its febrifuge powers. He has used it in every case of idiopathic fever that has fallen under his charge for the six months preceding the date of his writing, with perfect impunity, and with the most desirable results; neither age nor sex interfering with its exhibition. He does not, however, rely upon it solely in all cases, especially those of a high grade; but he thinks it entitled to rank as a *coefficient* with *quinine* in fevers. In this respect he stops short of others farther South, who speak of it as a specific in this class of diseases.

Dr. Mayes, in summing up his own opinion of gelseminum, deduced from actual observations of its effects, thinks it is a most valuable adjuvant to other treatment, in all cases where high arterial action exists, and where, as in the case of injuries, it is desirable to lessen the irritability of the nervous system; in hysterical affections its value cannot be too highly estimated.

Dr. John Douglass, of South Carolina, in a letter to Dr. F. P. Porcher, (*Charleston Med. Journ. and Review*, July, 1857,) gives his experience, during a period of thirty years, of the curative powers of the yellow-jessamine (*gelseminum sempervirens*) in gonorrhœa. He uses a tincture made of diluted alcohol, as follows:—A small handful of the root is put into a common junk bottle of whisky, and after a day or two days' infusion, the patient is ordered a tablespoonful of the tincture night and morning. Temporary disturbance of vision sometimes follows the use of the medicine.

Dr. Elliott, in his Botany of South Carolina and Georgia, says of the gelseminum, that the flowers, root, and the whole plant are narcotic; and that a saturated tincture had been long used with marked success in rheumatism.

Aconitum Napellus—Aconite.—Dr. Edward B. Stevens, of Cincinnati, reports (*Cincinnati Medical Observer*, Oct. 1857,) his success, confirmatory of the experience of others, in the use of the aconite, for the cure or relief of "almost the entire range of neuralgic affections, and of those obscure complications, of rheumatism and neuralgia, in which there is freedom from local or constitutional trouble, independent of nervous derangement."

In a case of neuralgia "supposed to be a result of previous attacks of miasmatic disease," and which was treated by the use of quinine and other remedies with but temporary relief, Dr. Stevens prescribed a mixture of the tincture of aconite and tincture of cimicifuga, which gave entire relief to his patient. The proportion was—℞. Tinct. rad. aconit. ʒi.; Tinct. cimicifuga, ℥ij.—M. Dose, a teaspoonful every four hours. Three doses were sufficient to procure the desired relief. Ten months had elapsed without a return of the disease.

A case of neuralgic rheumatism of the arm, of peculiar obstinacy, after having been intractable to all remedies, yielded to the aconite. In the above formula, each dose should be equivalent to about four drops of the tincture, although, in fact, this latter gives somewhat more than sixty drops to the drachm. In this dose, of four drops, Dr. Stevens has "never seen any effects sufficiently marked or evident to occasion alarm."

Dr. S. has not used this article in acute rheumatism; but in chronic rheumatic pains, particularly in old people, he has derived excellent effects from it. In dysmenorrhœa, or neuralgia associated with uterine derangement at or subsequent to the catamenial period, entire relief, followed by refreshing sleep, has been obtained by the administration of the aconite.

In the diminished and sometimes abolished sensibility and voluntary motion to which aconite gives rise, we find similarity of effects to those produced by veratrum viride and gelseminum.

Valerianate of Ammonia.—Dr. W. Hay, of Chicago, (*North-Western Med. and Surg. Journ.*, Oct. 1857,) relates his experience of the valerianate of ammonia in a case of neuralgia. The subject was a lady laboring under incipient tuberculosis and anæmia, who was seized (June 6th, 1857,) with severe neuralgic pains in the right temple, extending over the entire half of the head and face. The pains were mitigated by the local application of chloroform, but the relief was not complete until after the lapse of five or six hours. During the six following days the patient still suffered. On the 19th June, Dr. Hay directed the following mixture:—R. Tinct. val. ammon. ʒvi.; Tinct. opii, ʒij.—M. One teaspoonful to be taken every three hours; local applications to be continued. This treatment was continued for several days, but without any sensible effect, except great irritability of the stomach, with excessive nausea and vomiting. In place of the valerianate, the tincture of aconite was prescribed in doses of five drops every two hours, and also its application externally; but although its use was persisted in for twenty-four hours, no benefit ensued. On the contrary, the paroxysms were greatly lengthened, so as to require a return to the application of the chloroform externally, and its use by inhalation. July 4th.—The pain still continuing with slight intermissions, the precipitated subcarbonate of iron was taken every four hours, alternated with four grains of the subnitrate of bismuth. The nausea was, by this means, relieved and the pain ameliorated for two or three hours only, after which the pain returned with increased violence. July 6th.—Fowler's solution six drops, and a drachm of the tincture of Cannabis Indica every six hours were equally unavailing. July 7th.—Recourse was again had to the valerianate of ammonia in a deliquescent state, of which one drachm was dissolved in an ounce of water,—dose, a tablespoonful. A marked decrease of pain and augmented force with diminished frequency of the pulse, followed the administration of one dose at 7 P.M. After taking the second dose at 10 P.M. the patient sank into a quiet sleep, which lasted till morning. July 8th.—The same treatment was continued this evening as on the last, but although the pain was much diminished it had not entirely gone. The same prescription was continued on the two following days; but on the 14th, as the salt seemed to have lost its controlling power over the disease, and the duplication of the dose caused distressing dyspnœa and headache, without relief of pain, precipitated subcarbonate of iron in the dose of half a drachm was prescribed. This was followed by immediate and permanent relief from pain, which did not return. The treatment was persisted in for a few days, as a precautionary measure.

Another trial of the valerianate in the same case, on the occasion of a return of the disease, a month afterwards, was attended with more permanently beneficial results. Other remedies had been tried in vain. A temporary suspension of the "pain had been procured by the inhalation of chloroform." One grain of the crystallized salt of the valerianate of ammonia, dissolved in a teaspoonful of water, gave almost immediate relief; and in fifteen minutes the patient was asleep. The relief has been permanent.

Dr. Hay attributes his success, in the last trial of the valerianate of ammonia, to the greater strength of the article. The specimen first used had absorbed so much water as to become perfectly deliquescent.

The formula used by M. Declat, to whom we are indebted for a knowledge of the efficacy of the valerianate in neuralgia, is as follows:—Distilled Water, two drachms; Valerianic Acid, one drachm; Subcarbonate of Ammonia, enough to neutralize the acid; then add Alcoholic Extract of Valerian, two scruples. The dose was, on the first night, a teaspoonful, and on the following day, two teaspoonsful. The dose was raised to a dessertspoonful night and morning.

The *Southern Med. and Surg. Journ.* tells of satisfactory results in two cases of obstinate temporal and facial neuralgia. The "*telling* dose" in the first, was three grains of the salts of the valerianate of ammonia in solution, and in the other, four grains of the same—each three times a day. The editor thinks that large abatement may be made from the extravagant eulogies in favor of this remedy in some quarters. The remark is applicable to all new remedies.

As valerian itself is usually spoken of as a stimulant, objection may be made to our placing the valerianate under the head of sedatives. Its speedily soothing operation and anæsthetic effect are so obvious, that they justify, in our mind, the place which we have assigned to the salt. We may add, as corroborative evidence, that M. Declat was led to the employment of the valerianate of ammonia in neuralgia, by the relief which he procured for himself from its use, when suffering from frequent headaches, which he attributed to a severe attack of meningitis. He experienced all the sedative effects of opium from the remedy, without the cerebral disorders with which he was always afflicted when he had recourse to the former.

Bi-sulphuret of Carbon.—Mr. James Schiell, of St. Louis, (*St. Louis Med. and Surg. Journ.*, Jan. 1857,) describes the mode of application, and some of the therapeutical uses of this substance. He directs that, of a mixture composed of equal parts of the bi-sulphuret and alcohol, a little shall be poured on a tuft of cotton, which is to be rubbed "pitilessly over the affected part four, five, or six seconds. A strong, burning sensation follows, lasting only a few seconds, with the cessation of which ceases also the suffering of the patient. Sometimes a second or even a third application, at intervals of two or three minutes, is necessary, and the pains will disappear as if the suffering part had been touched by a magic rod." In two cases of bilious colic, after a strong dose of calomel had been given, friction over the abdomen, with the mixture as above, (bi-sulphuret of carbon and alcohol) removed the pain in a few seconds. In addition to the treatment just mentioned, an injection, containing half a teacupful of glycerine, was administered.

Strychnia in Sciatica.—Dr. O. C. Gibbs, of Frewsburg, Chatauque County, New York, (*American Med. Monthly*, September, 1857,) relates an obstinate case of sciatica which had resisted colchicum, ammoniated tincture of guiacum, quinine and morphia, oil of turpentine, tincture of cimicifuga, iodide of potassium, Dover's powder, blisters over the great trochanter, and the endermic application of morphia, cups over the same part, and colomel to touch slightly the gums. For some time the patient, despairing of relief, had been in the habit of using opium, which was given at the discretion of his wife, as the only means of assuaging the pain. Dr. Gibbs describes his mode of using the strychnia, and its success, in the following terms:—

"We now took two grains of strychnia, in crystals, and put it with two ounces of water, slightly acidulating the water with sulphuric acid. We also took four grains of podophyllin and five of sulphate of morphine, rubbing them up with sugar, and dividing them into twenty powders. We ordered thirty drops of the solution of strychnia, also one of the powders, to be taken three times a day. The patient had no severe paroxysm of pain after this, and within three weeks from the time of commencing the strychnia, he went down the Allegheny and Ohio Rivers as a pilot on a lumber raft, and up to the present time he remains free from a return of the affection." The author has omitted to say when the successful treatment was begun, and at what date he wrote the account of the case. He took charge of his patient March 6th, 1857. We are left to gather from the narrative, that the trial of the long list of remedies above mentioned lasted about three or four weeks before recourse was had to strychnia. Each dose of the solution of this substance, as directed by Dr. Gibbs, was equivalent to the sixteenth of a grain.

Veratria and Morphia in Incontinence of Urine.—Dr. Thos. Kennard, Assistant Physician to Blackwell's Island Hospital, New York, reports (*American Journ. Med. Sciences*, Jan. 1857,) three cases of incontinence of urine, cured by the external application of veratria and morphia. His formula is:—℞. Morph. Sulphat. Veratr. āā. gr. x.; Axungiae, ℥j.; ft. Ung. The perinæum is to be rubbed with this ointment three times a day.

Etherization in Convulsions.—Dr. N. J. Knight, of Somerville, Massachusetts, (*Boston Med. and Surg. Journ.*, February, 1857,) records a case of puerperal convulsions, which followed abortion. "Bleeding, a cathartic, cold to the head, sinapisms to neck, legs, etc. did not prevent the recurrence of three or more convulsions in less than ten hours." Dr. Knight then began to administer sulphuric ether, (by inhalation,) and although no more convulsions occurred, it was not until the end of forty-eight hours that the nerves became so calm as to allow the ether to be omitted altogether. Ten days from the first attack, the lady was delivered of a seven months' child, which had evidently been dead from the time of the first convulsion." We are not told how often the inhalations were repeated, nor how much ether was used, nor the degree to which the etherization was carried in this case.

Dr. Knight mentions another case of convulsions in a married lady, which were promptly and effectually removed by the inhalation of ether. He considers "ether really the only safe and efficient remedy, for convulsions of *teething children* or adults, now known to the profession."

Dr. Ellis (*Boston Med. and Surg. Journ.*, Jan. 1857,) reports the case of a woman, aged 35 years, who, when eight months pregnant, was seized with convulsions, which were so continued and severe that the case was deemed hopeless, when Dr. Storer recommended the administration of ether by inhalation. This was had recourse to for about two hours, after which time there were no convulsions. The patient recovered her consciousness, but sank, after some days, under gangrene of the lungs. A dead child was born not long after the etherization.

Dr. Wm. Dickey, of Centreville, Indiana, reports a case (*Western Lancet*, May, 1857,) of puerperal convulsions of a very violent character following the first labor, which ceased on the administration of the chloroform, although the coma lasted two days afterwards.

A case of violent convulsions accompanying and immediately following difficult labor, in which turning was practiced, and after the birth of the child, chloroform was given by inhalation with entire success, is recorded by Dr. Oliver, among *Extracts from the Records of the "Boston Society for Medical Improvement."* (See *Boston Med. and Surg. Journ.*, Feb. 1857.) The patient, who became unconscious after the first convulsion, remained so for some days; the recovery was very gradual, and not without occasionally alarming symptoms.

Dr. H. R. Storer, of Boston, strongly recommends the use of anæsthetic agents in cases of infantile convulsions, where no actual organic disease of the brain exists. He reported (*Boston Journ., ut supra*) a case where a girl, 12 years old, who had never menstruated, was taken with convulsions. The first night of her illness she was relieved by the ordinary course of warm bath, emetics, etc. The convulsions returned on the second night, when, having in vain employed the ordinary treatment, and the patient evidently failing, Dr. S. administered chloroform. The single convulsions were at once stopped by a short inhalation; and, finding its good effects thus manifested, he kept her well under its influence for half an hour, after which there was no further return of convulsions.

Dr. Casey, of Middletown, Conn., adds his testimony to that of others in favor of anæsthesia by chloroform inhalation. He has used the remedy in various forms of convulsions—puerperal, infantile, epileptic, and hysterical—and he has scarcely ever failed to find it beneficial.

Tobacco in Erysipelas.—Dr. John G. Stephenson, of Terre Haute, Indiana, desires to call the attention of the profession (*Western Lancet*, May, 1857,) to the treatment of erysipelas which has proved so beneficial in his practice, that the use of it has become, with him, a matter of routine. "The treatment is simply the covering of the inflamed surface with wet tobacco leaves, (such as are to be had in any cigar shop,) which are permitted to remain until much nausea is produced." Dr. Stephenson, while he admits that the excessive and distressing nausea produced by the internal use of tobacco prevents its administration by the stomach, is willing to believe in its power and safety when cautiously applied to a cutaneous surface, as a remedy for local inflammation.

We must, however, be aware of the difficulty, not to say impossibility, of determining, after no matter how many trials, the extent of surface to be covered, and of absorption produced by this application of the tobacco, so as to procure the desired amount of sedative effect and accompanying nausea. The difference between the internal and external use of tobacco is only one of degree; and in both instances there is uncertainty and risk of alarming, if not fatal results. Hence the great caution always practiced in the administration of this plant as a therapeutic agent—a caution which is especially called for in cases of erysipelas in old subjects with broken-down constitutions and slight powers of reaction.

In one of the cases related by Dr. Stephenson, the patient was pregnant about five months. She soon got well under treatment. This consisted in the use of calomel, followed by saline purgatives, Dover's powder, sulphate of cinchona, and the local use of tobacco. In another case of a person aged 17 years, slightly chlorotic, in which tincture of the chloride of iron internally and tincture of iodine externally failed to prevent the extension of the inflammation of the leg from above the ankle to above the knee, the application of the wet tobacco leaves soon produced extreme nausea and prostration, followed, after several other renewals of the same topical treatment, by a complete removal of the inflammation.

Chloroform Inhalations in Delirium Tremens.—Dr. F. M. Garrett, of Tarborough, North Carolina, gives (*American Journ. of Med. Sci.*, April, 1857,) a "report of five cases of delirium tremens treated by the inhalation of chloroform." The remedy was had recourse to after other means had failed to produce sleep, or to quiet the patient. In the first case, a man aged 34 years, to whom brandy and morphia had been given without sleep having been procured for thirty hours, ℥ij. of chloroform "were inhaled, when the patient was breathing stertorously. The administration occupied half an hour. At its commencement the pulse was 144; when under its influence, 128. Respirations nine per minute. There were several convulsive movements during the inspiration. He slept soundly for about an hour, when he awoke, but almost immediately slept again. This occurred two or three times during the night. 20th.—The patient expresses himself as greatly improved, and feels able to write. He is perfectly rational. No treatment except good diet and quiet. From this time he improved, and was discharged the 24th" (of September, 1852,) eight days after his reception into the hospital.

The second case was of a man aged 40 years, of good constitution, and generally enjoying good health, but of intemperate habits for the last five or six years. Brandy and opium gave partial repose the first night of his admission; but after this, on the second day, the administration of sulphate of morphia and tartrate of antimony had no effect. The patient is only kept in bed by force; trembles violently, and is bathed in perspiration. Eyes suffused. Pulse 120. "A drachm of chloroform was poured on a towel and applied to the nose—the pulse having been closely watched by an assistant. After inhaling about two minutes, a slight tremor of the lower extremities was noticed. No change in the pulse. The towel was removed for about five minutes, when, the tremor having ceased, another drachm of the chloroform was administered. In a few minutes patient was sleeping soundly. Pupils, before widely dilated, now contracted. Slept about one-quarter of an hour, when he awoke. Two drachms more of chloroform were administered; the towel not applied closely to the nose. In ten minutes he fell asleep, and slept the remainder of the night—13th (November, 1851; three days in the hospital.) 10 A.M., patient entirely rational; complains only of weakness; pulse 85, tolerably full; skin comfortable; ordered nourishing diet. No further treatment necessary."

In the third case, the patient was 30 years of age; had been very intemperate for the last eight years. Opium was ordered during two successive days and nights. On the second night seven grains had been taken, but without sleep being produced. Patient wild and disorderly; had terrifying apparitions. On the third night seven grains of opium were taken, but without sleep following. At 10 A.M., he was put under the soporific influence of chloroform, to effect which two and a half ounces were administered. "He yielded to its action several times before the quantity had been taken, but would wake up immediately and become riotous. While under its influence, the pupils were strongly contracted, dilating when he aroused, only to contract again when he yielded to the influence of chloroform. He awoke after five hours sleep, and took a little beef tea. His condition little improved. Ordered tinct. opii in forty-minim doses, with beer, every two hours till sleep is produced—11th [October, 1851, the 4th day of delirium.] He took 60 minims of tinct. opii, which effected a long, quiet sleep. He is, this morning, quite rational, and has an appetite. Ordered two ounces of beef tea, for which he craved, and a pint of beer daily, in addition to the diet of the house. 12th. Much improved. Discontinued opium and brandy, and gave tonic mixture. 14th. Transferred from ward, cured."

The fourth case was of a man aged 45 years, who had been drinking excessively for some time previously, and suffering under dysentery for a week. Has slept none for several nights. On the second day after his admission into the hospital, which took place September 17th, 1850, chloroform was administered. "At the beginning of the inhalation, the pulse was 130, and he was perspiring moderately. He yielded to its influence very quickly, but the respirations became so slow, that he had to be roused from his stupor, and made to breathe. This followed every attempt to bring him under its influence, and he was consequently only partially etherized. Some convulsive movements occurred during its administration. He slept only a short time, but the wildness was gone, and, at intervals through the night, he slept awhile. When under the influence of chloroform, the pupils contracted to a point, and were so immediately when awaked. 20th. Patient is worse this morning, being comatose. Treatment was continued through the day, but patient continued to sink, and died at 7 P.M. *Autopsy seventeen hours after death.*—Intense arachnitis, with serum effused under the arachnoid membrane. Lymph over the surface; ventricles normal; some serum at base of brain."

The subject of the fifth case was 52 years of age; admitted Sept. 20th, 1851. He had been drinking excessively for some time past, and had dysentery for three weeks. Was nervous, and had been delirious during the three past nights. Pulse regular, and not too frequent. Half an ounce of brandy and ʒj. tinct. opii were ordered every hour till sleep was produced. 21st. Patient had slept about four hours during the night, and the dysentery is checked. 22d. Had slept none for thirty-six hours, and was so wild through the past night, that it was necessary to confine him to bed. Treatment, as above, continued without intermission, but without good effect, and by night the dose of the tinct. of opii was doubled. This was continued till 1 A.M., when it was deemed necessary to administer chloroform. "Pulse at beginning, 128. Patient furious, and sweating freely. When a small quantity had been inhaled, convulsions of the most severe kind came on, causing for awhile the suspension of the chloroform. These occurred several times during the inhalation, and generally on the application of fresh chloroform. In about half an hour the patient was brought fully under its influence. Pulse 120. Otherwise, about the beginning of the inhalation, he slept about three hours, when he awoke, and the chloroform was again administered with the same results as before. He slept till morning. 23d. Felt pretty comfortable through the day, but became wild at night, although the treatment before mentioned was continued only when he was asleep. At 11 A.M., as the patient was unable to sleep, chloroform was again administered. Pulse 90, tolerably strong. During the inhalation he suddenly became furious, and attempted to strike those around him, and soon afterwards, convulsions of the kind above named seized him. Three of these occurred. In about twenty minutes the full effect was produced, and the patient slept till morning. Pulse about as at the beginning. 25th. Patient is improving. He sleeps well, and complains only of debility. Ordered a nourishing diet, and a moderate amount of stimulus. 28th. Patient is convalescent."

In three of these cases Professor Metcalfe was the visiting physician, and in two, (the second and the third,) Dr. McCready. The house physicians were Dr. Elliott, in the first, fourth, and fifth cases, and Dr. Olmstead in the second case. No name is designated in the third one.

In the same number of the Journal, we read an account by Dr. W. M. Chamberlain, of Astoria, Long Island, of eight cases of delirium tremens, in which chloroform was inhaled "as the '*ultima ratio medendi*,'" with the effect of procuring sleep and tranquillity, and restoring the patient. In one case pneumonia followed, and proved fatal; in another the patient, after restoration to consciousness, sank exhausted. In one case the respiration was suddenly suspended upon becoming stertorous; in another asphyxia was produced suddenly, "but the disease was as suddenly vanquished." In a third the asphyxia came on shortly after inhalation had been stopped; while in another, both asphyxia and syncope followed the inhalation. All these were restored by means of artificial respiration.

Stramonium in Convulsions.—Dr. R. H. Salter, of Boston, relates his experience in the use of stramonium both in puerperal and common convulsions. (*Boston Med. and Surg. Journal*, March, 1857.) In reference to the first of these, he passes in review some of the modes of treatment which are had recourse to. We omit this enumeration and his criticisms on the occasion, which will be noticed more appropriately in the Report on Obstetric Medicine, in a future number of this Journal.

Of the six cases of puerperal convulsions detailed by Dr. S., five were of females in their first labor; the subject of one was attacked in her fifth labor. In the first case, the convulsions occurred on the eleventh day after delivery, and they left behind them permanent partial paralysis of the right side of the body. Age, 26 years. Half an ounce of the tincture of stramonium was given at a single dose. Dilatation of the pupils ensued in forty minutes, and the convulsions ceased. In the second patient, age 20 years, the convulsions came on just as the head was passing the superior strait. She took half an ounce of tincture of stramonium, with tincture of ergot—quantity of the latter not stated. Convulsions returned but once afterwards, and a healthy living child was born. In the third case the labor was slow, and the convulsions assumed a tetanic character. Relief procured in the same way as in the preceding case. The fourth patient had slight uterine hemorrhage for a week before the coming on of labor. A very large blood-letting failed to abate the violence of the convulsions, which were arrested completely by the tincture of stramonium, in a dose of ten drachms, given as an enema; the patient being unable to swallow. She was delivered of a small dead child. In the fifth case, that of the fifth labor, convulsions oocurred eight or nine hours after labor had set in. The convulsions ceased, and the patient became tranquil in half an hour after the administration of the tincture of stramonium. The sixth case was that of an unmarried female, aged 19 years. The fits came on at the time the head was passing the superior strait; they ceased after the administration of half an ounce of the tincture of stramonium, with ergot—quantity of the latter not stated. Five hours after the birth of the child, pain and convulsions supervened, which were arrested by a dose of five drachms of the tincture of stramonium.

Dr. Salter, in concluding his history of these cases, which we have abbreviated, remarks, "that the common and hysterical forms of puerperal convulsions will tolerate, and, for the most part, do well, under almost any rational and judicious treatment. Still, in these forms, I consider the treatment with stramonium as far preferable. It is in the epileptic form, the most frightful and formidable of all puerperal convulsions, that the common treatment is most likely to fail; and if, perchance, it should not fail, it is replete with peril, not only immediate, to life, but also to the future health of the individual. It is in this form that the comparative value and power of stramonium to control spasmodic action is most strongly exhibited."

Dr. Salter, although an enemy to large bleeding, practiced on these occasions, admits that there are cases in which the inflammatory excitement is great and manifest, in which a moderate bleeding should be premised as a *preparatory* measure. Ergot and lupuline will also be found necessary adjuvants, and other articles which might be mentioned; but in no case is any one of them a remedy *per se* for convulsions.

Dr. Salter describes two cases, one a male, aged 17 years, the other a single female, aged 24 years, who had suffered from convulsions, and to both of whom he gave tincture of stramonium with success. In the first case, he directed the tincture to be taken in one-drachm doses every fifteen minutes, until four or five doses were taken. On a repetition of this course, the medicine was directed to be continued at intervals of four hours after the fourth dose, as above. The female had had convulsions. The boy had no more fits after the second day from beginning with the stramonium. The female had had convulsions, simulating tetanus, for thirty-six hours. Dr. Salter ordered the use of the tincture of stramonium in half-ounce doses. If the first did not relieve the patient within half or three-quarters of an hour, the same quantity to be repeated. "In less than half an hour after the medicine was given the convulsive action ceased, and the woman became perfectly quiet, fell asleep, and did not awake until next morning, when she rose, feeling perfectly well, experiencing no inconvenience whatever from the disease or the medicine."

Dr. Salter makes an apposite, and, at the same time, a practical remark, in conclusion. It is that, in his belief, many of the cases reported as tetanus are only counterfeits of this disease.

Cannabis Indica—Haschisch—Indian Hemp—Called also *Gungha*, *Bung*, etc.—Dr. John Bell, of Derry, New Hampshire, has a paper, in the *Boston Med. and Surg. Journ.*, April, 1857, on the effects of this plant, chiefly in a psychical point of view. He describes the manner in which he was affected when he put himself under its influence. Room is not allowed us to give even an analytical notice of his opinions and observations on this interesting theme, and we must be content to note a few passages. Among these, is one on the resemblance between a state of mind produced by the *Haschisch* and that occurring in Mania—a resemblance noticed both by M. Moreau and Dr. Bell:—"In both states there is the same excitement and abruptness of manner, the same rapidity and incoherence of thought, the same false convictions and lesions of the affective faculties."—"There is no error of judgment, no delusion or lesion of the will or moral faculties, which is seen in the former state, [Mania,] but what might take its rise in the latter." Dr. Bell describes the series of mental phenomena which were produced on himself by this substance:—"Amid all the strange vagaries of the *Haschisch*, the mind preserves the power of taking cognizance of its condition, and, to a certain extent, of analyzing its operations. The memory of everything said and done is nearly perfect; but of the multitude of thoughts, only those making a more than commonly distinct impression are preserved." He thinks that considerable light might be thrown on insanity, and especially delusions, by watching and analyzing the effects of the Indian hemp, which we may take as a picture of the mind when under another and more enduring series of morbid impressions.

Speaking of its operation on the brain, in reference to the psychical phenomena produced in consequence, Dr. Bell thinks that *five* grains is the smallest quantity from which any perceptible effects are to be expected, and generally more will be required. This opinion coincides with our own experience of the drug (the extract of *Cannabis*) when we have administered it for the alleviation of pain, as in neuralgia, and to procure sleep in delirium tremens.

Dr. A. Bryant Clarke, of Holyoke, (*Bost. Med. and Surg. Journ.*, May, 1857,) tells us, in reference to Dr. Bell's statement of the dose of the Cannabis Indica required to produce the desired effect, that a pill of the English extract, in the quantity of two grains and a half, given to a maniacal patient, who had previously taken the medicine in two-grain doses, produced very marked effects. On visiting his patient, two or three hours after she had taken the pill, Dr. Clarke found her sitting up, and more rational and quiet than she had been for weeks:—"The attendant described her as apparently fainting, with respiration slow and regular, a blue and dusky state of the skin, blood settled under the finger nails, and said they had with difficulty kept her alive." Dr. Clarke being incredulous of the effects attributed to the medicine, swallowed one of the pills, soon after a hearty dinner. Within an hour he began to feel its peculiar effects, such as are so well described by Dr. Bell. Dr. Clarke's left arm was paralyzed, the skin looked blue, and there was a blueness under the finger nails, as though the blood were imperfectly arterialized; the pulse was natural. The effect of the Cannabis was at its height in about three, and passed off in about five hours. The arm was in a powerless condition for half an hour, but friction would partially restore it.

Dr. Merret, of Detroit, in a short article on this subject, (*Medical Independent*, Sept. 1857,) describes the Cannabis as a deliriant which produces on many of the native population of the East, who use it freely, a most undesirable, in fact, a dangerous frame of mind. These evils are, however, fortunately counterbalanced by the antispasmodic effect of the drug. Dr. Merret speaks from a personal observation, during three years in a military hospital at Calcutta, of its administration in *tetanus*. In idiopathic cases it was most generally successful, and even in traumatic cases it showed its superiority over all other remedies. He mentions two cases of its successful use in England. Its relaxant effect has been proved to be an aid to taxis, in the reduction of hernia.

For farther details of the effect of doses of different degrees of strength, and the descriptions of the manner in which haschisch affects different individuals we would refer the reader to an article in the "National Review," copied into *Littell's Living Age*, Feb. 20th, 1858.

Pœonia Officinalis—Peony.—Dr. Abraham Livezey, of Lambertville, Penn., in "Observations on Convulsions of Children," (*Bost. Med. and Surg. Journ.*, Jan. 1857,) speaks of this plant possessing "peculiar anodyne or strong nervine powers; from the fact, farther, that it will allay the nervous twitches, the *subsultus*, or the peculiar startings of infants during repose." The mode of preparing and administering it is as follows:—Take of the dried root of Peony, grated, half a teaspoonful, scald it, and sweeten, and give the whole at once to a child 3 or 5 years old, three times a day. To an infant the same quantity may be given, in divided doses, during the day, or 24 hours. Dr. Levezey relates a case in which three physicians had failed to stop convulsions of daily recurrence during a period of several weeks, in a child 9 years old. Aunt Charity came along with dried "*piney*" root in her pocket, one dose of which she administered as above, and wonderful as it may appear, the convulsions ceased from that time. Other cases of a similar termination, by the same treatment, have come under Dr. Livezey's notice.

Lobelia in Hydrocephalus.—Dr. Ariel Hunton, of Vermont, in "Remarks on Hydrocephalus and Indigenous Plants," (*New Hampshire Journ. of Med.*, Jan. 1857,) points out the resemblance between hydrocephalus and the third stage of cholera infantum. The former is rather a misnomer in the present case, for in the stages which he thinks curable, Dr. H. does not admit that effusion has taken place. He believes that he has to deal with a case of arachnitis. His remedy for the state of things referred to, is the saturated Tincture of Lobelia; to a quart of this he adds half an ounce of the *Sanguinaria Canadensis.* Of this compound tincture he gives a teaspoonful to a child of two years, and a tablespoonful to an adult. He looks upon Lobelia as a direct sedative, which will, if taken without dilution, and without some stimulus conjoined with it, distress unduly the stomach, and give rise to other untoward symptoms. He considers it as an emetic; and, as such, he believes that, if properly administered, it is as safe as any other emetic—ipecacuanha not excepted. His treatment of arachnitis consists chiefly in the use of the Lobelia as an emetic every other day, and on the intermediate day, "a cathartic of calomel and a trifle of jalap."

Indigenous Medicinal Plants.—Dr. Hunton tells us that, for some years, he has made these plants the subject of his diligent study, in the daily use of them, and finds them, to say the least, as efficacious as foreign drugs. "*Scutellaria Lateriflora* and *Clematis Virginiana* are preferable, as nervines, to valerian. Among the abundance of our narcotics, I use (continues Dr. Hunton) more of the extract of stramonium than of all others, except opium. I prepare most of my narcotics with my own hand, to insure a pure article. If the practitioner does not choose to prepare these remedies himself, he may purchase them prepared by Tilden & Co., and will be sure of their purity."

Asclepias Tuberosa.—Pleurisy Root.—Butterfly Weed.—In the uncertainty which must be felt by every classifier as to the place which should be assigned to this plant—considering its diaphoretic, expectorant, cathartic, and tonic operation—we have put it under the head of Sedatives, looking to its ultimate soothing effect, rather than to its increasing, in various degrees, the activity of the functions, by which this result is reached.

Dr. Goodrake, of Clinton, Illinois, has made a "Report on the Medicinal Properties of the *Asclepias Tuberosa*," which finds its place in the "Transactions of the Illinois State Medical Society, 1857."

Dr. Goodrake gives the opinions of most of our systematic writers on the Materia Medica, respecting the medicinal properties of the Pleurisy root—and adds his own, which we believe to be the correct one, viz.: that in ordinary doses it is slightly sedative and astringent. Among the diseases to which this plant is well adapted, he enumerates catarrh, pneumonia, pleurisy, measles, incipient consumption, dysentery, cholera infantum, and the ephemeral fever, which is so common in children during the winter season. Dr. Goodrake has "given it in a variety of diseases, with a view to its properties as a diaphoretic, sometimes as an expectorant, and, in a great many cases, to quiet the bowels." He compares its action on the system to that of Dover's powder, but without the drawbacks attending this latter, of cerebral disturbance and impeded secretion from the kidneys. He lays particular stress on its remedial powers in both the diarrhœa and dysentery of young children. The root is given in powder, decoction, and extract. The preparation used by Dr. Goodrake in one case, was a decoction of the root, made by adding one ounce to a quart of boiling water, and keeping the fluid at a boil for an hour. Of this half a teaspoonful was taken every two hours in a case of dysentery intractable to the usual remedies. In another case, two drachms of the powdered root were combined with twelve grains of sugar of lead and six grains of camphor, the whole divided into six powders, of which one was to be taken every three hours; the patient drinking freely, the while, of pleurisy root tea. In a case of protracted infantile diarrhœa, Dr. Goodrake gave a decoction of the pleurisy root in milk—two drachms of the former to half a pint of the latter. Dose—a teaspoonful every hour. The improvement in the condition of the little patient after beginning this treatment was surprisingly rapid. "It may be well to remark, (says the writer,) that I allowed strong beef broth, well salted, during the whole of my treatment."

Tartrate of Antimony in Colic.—They who think of this antimonial salt only as an emetic and nauseant, have very limited and imperfect ideas of its therapeutical value, and of its activity as a sedative, or, to use the language of some Italian pathologists, as a counter or contra-stimulant, adapted to a large number of the phlegmasiæ, and producing its benign effect without nausea or any evacuation whatever. The annals of European medicine, especially of Italy and France, and, although in a more limited degree, of Ireland, prove this question beyond all doubt. Hence we can feel less surprise at the good effects of this substance in relieving colic, particularly of the stercoraceous variety, when administered in a state of proper dilution, as an enema.

Dr. C. Puffer, of Shelbourne Falls, Mass., gives, in the *Bost. Med. and Surg.*

Journ., May, 1857, an account of a case of obstinate colic, which had resisted the usual remedies, but which yielded, in about forty minutes, to an enema, consisting of three grains of antimony in eight ounces of sweetened water.

Dr. Hosack, the eminent father of the present physician of New York, had recourse many years ago to this mode of treating a case of obstinate constipation and colic, with entire success.

Cicuta in Sick-Headache.—Dr. J. C. Norton, of Homer, Minnesota, in a Report on the Botany of Winona County, says of the Cicuta:—"In small doses, it is, according to my experience, a sure cure for nervous and sick-headache."

Strychnia in Sick-Headache.—D. J. B. McCaw, of Richmond, Va., in a paper on Sick-headache, (*Virg. Med. Journ.*, Jan. 1857,) expresses his conviction, as the results of some experiments made with the extracts both of *Ignatia amara* and of the *nux vomica* in old cases of long standing and great obstinacy, that in some of them at least, much benefit may be derived from some of the preparations of strychnia in diminishing the number of paroxysms and the susceptibility of the brain to future attacks.

Belladonna in Arresting the Secretion of Milk in Swollen and Painful Breasts.—Dr. S. Willey, of St. Paul, Minnesota, makes a very favorable statement (*Cincinnati Med. Obs.*) of the use of belladonna under the circumstances just named. He says:—"Upon reading Dr. Goulden's article in my number of the *London Lancet* for October, I resolved to make early trials of the remedy, and five cases had been furnished me of tumefied and painful breasts, not differing in any essential features from those reported by Dr. G., in which the free use of the extract of belladonna to the areola has acted like a specific in every instance. Once only did assistance seem required—citrate of magnesia having been given where protracted constipation obtained." Notes of two cases are furnished. In the first, distended and painful breasts followed weaning of the child, aged 11 months. Dr. Willey "ordered that the breasts should be well drawn, and an ointment composed of extract of belladonna and simple cerate, two-thirds of the former to one of the latter, to be rubbed upon the nipples and areola every two hours. Three hours subsequently, found breast flaccid and free from pain, much to the expressed wonder of the lady and the concealed surprise of myself. No refilling." The second case was that of a lady aged 21 years, who lost her child, aged seven months. "The application of belladonna *to the entire breasts* was made in this case, and complete relief was obtained in six hours. Extreme dilatation of the pupils, with strabismus, was produced, which passed away soon after the administration of paregoric in hot brandy sling. This was the only case where other than the nipples and areola were anointed."

(*To be continued in the November Number.*)

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

SURGERY.

I. *A New Method of Amputation.* By M. MAISONNEUVE.

M. MAISONNEUVE read before the Académie des Sciences, April 26th, 1858, a note on a new operation for amputation, which he calls the *diaclastic method.* The peculiarity of this method is, that for its execution neither the knife is used for dividing the muscles, nor the saw for cutting the bones, nor permanent ligatures to arrest hemorrhage; and that, contrary to the ordinary methods, the division of the bone constitutes the first step of the operation, and precedes the division of the soft parts.

The principal object of this method is to avoid the occurrence of purulent infection, by substituting for the ordinary process of division by cutting instruments, the process of breaking, tearing, and extemporaneous ligature, the contusing action of which obliterates effectually the vascular orifices.

M. Maisonneuve uses for the execution of his method an *osteoclast,* or instrument for breaking the bone; and a powerful *serre-nœud* for the division of the soft parts. The author describes the operation in the following manner:—

"The patient having been brought under the influence of chloroform, the surgeon applies the osteoclast precisely on the spot where he intends to break the bone, taking care to protect the soft parts in contact with the instrument by thick compresses; then, giving the screw several turns, he produces the fracture; he removes the instrument, and immediately substitutes the serre-nœud, in the metallic loop of which he embraces the member ten or fifteen centimetres below the point of fracture; then, turning the screw, he gradually compresses the tissues until the circulation in the vessels is interrupted. This done, he divides the muscles to the bone by a circular incision with the bistoury, two or three centimetres below the serre-nœud, tears off by a twisting movement the extremity of the member which is attached merely by same adhering portions of muscular tissue, and finishes the operation by continuing to turn the screw of the serre-nœud until the tissues embraced in the loop of the ligature are completely divided. If the last step of the operation is conducted with prudent slowness, not a drop of blood will ooze from the wound resulting from the amputation, whatever the amputated member may be."

This singular method has been applied with success to five amputations of the leg and to one of the forearm.—(*Archives Générales,* June, 1858.)

II. *On the Scooping out of Bones as a means of preserving their Shape and Functions, and of avoiding Amputations.* By Professor SÉDILLOT. (Read before the Académie des Sciences, March 1st, and April 12th, 1858.)

The object of this new operation is to fulfill one indication which often presents itself to the surgeon, and the great advantage of which no one contests, namely, to preserve the periosteum in order to favor the reproduction of new bone. This preservation of the periosteum has produced excellent results in the hands of Blandin, Baudens, and some other surgeons; but the dissection of the periosteum, and the extirpation of the subjacent bone, are difficult and dangerous operations. M. Sédillot proposes another process, which consists in scooping out the bone, and leaving the exterior or cortical layer intact; this layer is afterwards absorbed, and replaced by a new bone, which augments each day in volume and strength.

The operation is practiced in the following manner:—An incision is first made over the whole length of the diseased bone where it is most superficial, and farthest from the trunks of the vessels and nerves. Two other incisions, including about the fifth part of the circumference of the member, cross at a right angle the extremities of the first, and serve to form two lateral flaps. These are turned back on each side, and must contain the subjacent periosteum. The bone thus laid bare is immediately attacked by the gouge, chisel, and mallet. On penetrating the medullary canal this is dug or scooped out, made smooth, and the bone is reduced to a kind of slender shell, which is filled with charpie; the wound of the soft parts is dressed without bringing the flaps together. The advantages of this proceeding are the following:—the periosteum remains intact, and is not at all deformed; the operation is of easy execution; hemorrhage is not to be feared, the open vessels being accessible to immediate ligation; the preserved osseous surface can be cauterized or plugged according to the indications. The muscular attachments do not suffer; the wound remaining open, and retains neither plasma, nor serum, nor pus, which always find free issue. The inflammation does not go beyond the traumatic surfaces. Lymphitis, diffuse phlegmonous inflammation, pyæmia, putrid infection, are not to be feared; the wound remains simple, and heals generally without accidents.

The scooping process is applicable to suppurative hyperostosis, complicated with numerous fistulæ, which communicate with the medullary canal, to condensing and to expanding ostitis, to caries kept up by sequestra or other foreign bodies; and, according to the author's opinion, the "évidement" of the extremities of the femur, and of the tibia in severe arthritis of the knee has great advantages over the resection of this joint, and the amputation of the leg. M. Sédillot has thus far experienced neither accidents nor failure in his operation. Of ten successful cases reported by the author we give the outlines of six:—

CASE V.—Coxalgia on the right side, of four years' standing, in a soldier thirty-one years of age. Luxation of the femur with caries; abscesses and numerous fistulous passages of twenty-six months' duration. Resection of the superior extremity of the femur on a level with the smaller trochanter, by separation and dissection of the periosteum. Scooping out of the osseous diaphysis to the extent of more than a decimetre. No untoward symptoms.

CASE VI.—Arthritis of the left elbow; traumatic intra-articular fractures; suppuration; grave accidents; resection of the trochlea of the humerus; scooping out of the inferior extremity of the humerus. Patient, a man thirty-one years old, is in a fair way of recovery.

CASE VII.—Caries, and numerous fistulous abscesses of the inferior extremity of the right femur. Scooping out of a portion of the diaphysis, and of the condyles. No accident. Patient, a girl thirteen years of age, is doing well.

CASE VIII.—Ostitis, caries, and necrosis of the inferior extremity of the right femur. Extraction of a large sequestrum. "Scooping." No accident. Patient, a man twenty-seven years of age, is doing well.

CASE IX.—Caries, with numerous fistulæ of the inferior extremity of the left tibia. Swelling of the tibio-tarsal articulation. Scooping out of the tibia. No accident. Patient, a girl of eighteen years, is doing well.

CASE X.—Ostitis, with abscess and fistula of the right tibia at its lower third. "Scooping." No accident. Patient, a girl thirteen years old, in fair way of recovery.—(*Gazette Hebdomadaire*, April 9th and 23d, 1858.)

III. *Observations on Hereditary Syphilis of the Bones and Cartilages.* By DR. SIGMUND.

The author communicates four cases of hereditary syphilis of the bones and cartilages. As in acquired syphilis of the bones, so also in cases of this kind the number of male patients outweighs that of the female, approaching the proportion of 2 to 1.

The disease begins to show itself in the tenth year of life. Among numerous patients, the most frequent period of commencing disease was observed between the tenth and seventeenth year. Retardation of development, leanness, pallor, frequent catarrhal and rheumatic affections which had occurred in such patients before the tenth year, are so little referable to syphilis, that they possess only small diagnostic value, as long as we do not positively know that the parents suffer from syphilis, and perhaps a comparison of the children points to the probable cause of these symptoms.

Tumefaction of the bone seems to commence without much pain, as the patients do not mention or remember anything about it, even if expressly asked; if, however, the swelling becomes more considerable, some complain of pain, which is increased with change of the weather, or sets in at night. Cutaneous ulcers accompany, very frequently, syphilis of bones and cartilages, and even often precede this disease; they are generally developed from scattered tubercles of the subcutaneous areolar tissue, as are the ulcers of the palate and throat. In three cases only the father was affected with the same form of syphilis at the time of the conception of the diseased offspring; in one case the mother. *The same form of syphilis was thus transmitted from parent to offspring, and exhibited itself in the latter only at a very long interval after birth, no other form having made its appearance during this interval.* It is remarkable, that in none of these cases abortion took place.

The treatment of these cases consisted essentially in friction with mercurial ointment, and the simultaneous use of cod-liver oil, iodide of sodium, or syr. ferri iodidi. The ulcers of the soft palate were touched frequently with nitrate of silver, and mouth-washes and gargles of crude alum were used. The cutaneous ulcers cicatrized, by the use of warm water dressings. Baths, pure air, and nourishing diet formed a part of the treatment.—(*Zeitschrift der Gesellsch. der Aerzte zu Wien*, 1858, No. 5.)

OBSTETRICS, AND DISEASES OF WOMEN AND CHILDREN.

IV. *On the Pathogeny of Hydrorrhœa of Pregnant Women.* By PROF. C. BRAUN.

HYDRORRHŒA, as is well known, is a periodic discharge of a yellowish, sero-albuminous fluid, which may either occur in drops, or in quantities of even several pints, from the genitals of pregnant women, but has no connection with the rupture of the fœtal membranes, and the escape of the liquor amnii. It is observed, generally, in the latter months of pregnancy, hardly ever before the third month; may occur either once or several times, imitates sometimes even the menstrual period, leads rarely to an interruption of pregnancy, ceases generally with delivery, but may continue in exceptional cases for some time during the puerperal state. On account of the red color of the excretion, the hydrorrhœic fluid is not unrarely mistaken for menstrual blood. Hydrorrhœa was considered a discharge of "false waters," and its symptoms were explained by numerous contradictory hypotheses.

The so-called "false waters" were believed to be either a secretion of the allantois, or to come from the magma reticulé and rupture of the chorion, or from the brownish mucus (hydroperione) existing between the decidua vera and the decidua reflexa, or from a transudation of liquor amnii through the fœtal membranes, or from the rupture of a hydatid situated in the vicinity of the cervix, or, finally, from the rupture of a supernumerary ovum. Some even considered it to be the real liquor amnii, and thought that the false waters were produced by a rupture of both membranes of the ovum taking place at a considerable distance from the os uteri.

Naegele was the first who recognized hydrorrhœa to be a product of secretion of the uterus, but believed that this did not reach the cavity of the ovum, on account of a disturbed endosmotic action of the fœtal membranes. The author has investigated this morbid process more fully, and has described hydrorrhœa in his "Manual of Midwifery," p. 534, as an albuminous exudation of the inner surface of the uterus (endometritis serosa,) which occurs in an intermittent manner, lifts off a part of the chorion from the decidua, or the decidua itself, forming thereby a more or less extensive reservoir, and is discharged at intervals as it reaches the os uteri.

This view is corroborated by the following circumstances:—That similar large albuminous excretions are observed, also, in unimpregnated women, attending several pseudo-plasmata, particularly fibroids of the uterus; that after birth neither chorion nor amnion show any signs of disease; that the quantity of the amniotic liquor is not diminished in consequence of a hydrorrhœa; also that the most plausible theories in regard to the formation of the amniotic liquor are not contradictory to this view; and that *microscopical investigation of a placenta,* *born after hydrorrhœa, reveals, on its convex surface, a new formation, having the appearance of a tender membrane consisting of areolar tissue*, as is confirmed by the following case:—

On the 7th of June, 1857, a healthy woman, twenty-three years of age, was received in Dr. Braun's clinic. The patient had lost, several times during her pregnancy, and also on the day of her admission, a considerable quantity of water from her genitals. Careful observation during three days convinced the attendants of the regular formation of the bag of waters, of the timely bursting of the same, and of the discharge of about six pounds of amniotic liquor. The child, born apparently dead, was premature, and had upon the palms of its hands and soles of its feet, pustules, (pemphigus neonatorum,) and numerous lentil-shaped spots deprived of epidermis. The after-birth was expelled naturally; the membranes of the ovum were nowhere perforated except at the place where the child had gone through. The child died the next day; the patient remained well, and was dismissed the second week after delivery.

Professor Wedl made a microscopic investigation of the membranes of the ovum, but was unable to discover the smallest trace of an abnormal rupture; on the convex surface of the placenta he found, however, a tender membrane of areolar tissue, which was hanging down here and there in shreds. This circumstance seems to indicate that an exudation took place between the wall of the uterus and the placenta, which would explain, very simply, the discharge of the so-called false waters, and the retention of the new formation of areolar tissue.—(*Zeitschrift der Gesellschaft der Aerzte zu Wien*, 1858. No. 18.)

V. *On Amputation of the Neck of the Uterus in Prolapsus of this Organ.* By DR. C. MAYER.

Dr. Mayer applies this method of treatment to prolapsus of the uterus in consequence of hypertrophy of its neck. His proceeding consists in removing the whole os uteri with the bistoury, after having fixed the uterus by means of hooks. The hemorrhage, which is often considerable, is arrested by the actual cautery; the dressing consists of tampons of charpie which retain the uterus in place; cicatrization of the wound is hastened by cauterizing it from time to time with nitrate of silver. Dr. Mayer prefers the bistoury to the écraseur linéaire, as the latter is apt to injure the neighboring organs. In a case treated in Langenbeck's clinic, where this instrument was used to remove an epithelial cancer of the neck of the uterus, the patient died on the third day, and the autopsy revealed a perforation of the bladder and of the peritoneum.

In three cases reported by the author, where the hypertrophied neck appeared outside the vulva, its amputation sufficed to arrest the very serious symptoms which accompanied the prolapsus, and to diminish considerably the volume of the engorged uterus; there remained only a slight prolapsus of the vagina which could be easily kept reduced by means of a tampon of charpie. A fourth case is recorded in the tenth volume of *Virchow's Archives*.—(*Monatsschr. f. Geburtskunde*, xi. bd., pp. 161–163.)

VI. *On Linear Ecrasement of the Cervix Uteri.* By DR. BRESLAU, of München. (Communication to the gynaekological section of the Thirty-third Congress of German Naturalists and Physicians.)

Dr. Breslau has used the écraseur up to this time, in four cases, for amputation of the neck of the womb, three times on account of carcinoma, and once on account of chronic hypertrophy and induration. In all cases the loss of blood was insignificant, and no secondary hemorrhage took place. In two cases a portion of the anterior wall of the vagina was grasped within the chain of the écraseur on tightening it, and was squeezed off, and once a loop of intestine prolapsed through the orifice thus made. In extirpating the cervix uteri, which is very vascular in its normal state, but becomes much more so when diseased, on account of the enlargement and new formation of blood-vessels, the écraseur is far preferable to the knife and scissors, as in using it hemorrhage is almost entirely avoided. Its employment in carcinoma of the cervix uteri is indicated only when between the diseased tissue and the cul-de-sac of the vagina a healthy place, at least 1‴ in width, can be found. The loop of the instrument must not be put on higher than necessary, because in tightening it the parts in close proximity to it are drawn along from above downward into the loop, whereby injuries may be inflicted upon the neighboring organs. In some cases it would be advantageous to use a curved écraseur, the convex side of which should, however, not be directed toward the sacrum, but toward the symphysis of the pubis.—(*Monatsschr. f. Geburtsk.* xi., Jan. 1858.)

VII. *Treatment of Engorgement of the Cervix Uteri with Ointment of the Chloroiodide of Mercury.* M. CH. BERNARD.

The preparations used by M. Ch. Bernard in the treatment of engorgement of the cervix uteri is the same as that proposed by M. Rochard. The formula for making it, as published in the *Gazette Hebdomadaire*, 1856, p. 172, is the following:—Take one part of iodine and two parts of calomel; reduce the calomel to a coarse powder, and introduce it into a matrass, heat it gently while stirring it, until it commences to sublimate, then add iodine in small portions, and the combination takes place.

For application to the uterus, from fifty to seventy-five centigrammes of this salt are mixed with sixty grammes of fat.

M. Rochard recommended the use of this ointment only in cases of simple and subacute engorgement showing a tendency to become chronic. It has been applied in the following manner:—The neck of the uterus, brought completely into view by means of a trivalve speculum, is cleared of the mucus covering it with charpie or wadding, which we have always found sufficient, or with a tampon soaked in glycerin, and applied the day before to the cervix, as recommended by M. Rochard. On the other hand, a moderately thick pledget of charpie of a little larger dimension than the cervix is prepared, and its centre covered by a thin layer of the ointment, so that its borders remaining dry may defend the vaginal mucous membrane from contact with the remedy which would otherwise occasion inflammation, (M. Rochard.) Then the pledget is carried up to the neck either with a dressing forceps, or, what is better, and has often been used by M. Rochard, by means of a wooden tube, one extremity of which (that upon which the pledget is placed) is proportionate in dimensions to the cervix uteri, and in which slides a stopper which applies the pledget exactly to the organ. This done, the vagina is filled with balls of wadding, and the speculum is withdrawn. Care has to be taken not to cram the vagina, as it would occasion unnecessary inconvenience and pain to the patient. Six or seven hours after the application of the ointment the speculum is again introduced, the different parts of the dressing are removed, and the cervix is laid bare, which is always found covered with an albuminous exudation.

M. Ch. Bernard reports the following cases:—

CASE I.—Voluminous cervix occupying the whole field of the speculum, and presenting some small granulations on the posterior lip; the engorgement is probably of two years' standing. Application of the ointment on the 21st of September and 1st of October. On the 12th of October the cervix uteri "seems to have returned nearly to its normal dimensions." The functional state of the parts is much ameliorated.

CASE II.—Considerable engorgement of the cervix of fifteen days' duration; a little redness, and some small ulcerations on the os. Only one application on the 7th of September. On the 9th of October "the patient left the hospital, feeling entirely well; she does not complain of pain in the hypogastrium, and the cervix uteri seems to have reassumed its ordinary volume and consistence."

CASE III.—Cervix very hard and much engorged; the disease commenced about two years ago. A single application on the 17th of September. On the 11th of October, "diminution of the volume and hardness of the neck, which seems to be reduced to its normal dimensions. The patient feeling well, demands to be dismissed."

CASE IV.—Old engorgement, which had disappeared after injections of carbonic acid, but has returned in the last two months. Cervix round, smooth, but hard, not voluminous, and directed backward. Applications on the 7th and 21st of September, and 9th of October. On this day the engorgement was much diminished, also the redness and anteversion. On the 18th the patient went out, feeling very well. State of the uterus on this day not indicated.

CASE V.—Engorgement of seven years' duration. Cervix voluminous, red, and presenting on its anterior lip, near the orifice, a small ulceration. Walking, impossible. Applications on the 24th of September and on the 9th and 20th of October. On the 23d of October the patient goes out. "The neck still seems a little swelled, in consequence of the application of the ointment." With the third application the engorgement had considerably diminished.

These are facts of evidently encouraging nature. In all cases the amelioration was obvious and rapid; and in spite of the reserved manner in which the author expresses the definitive result, the cure could have readily been perfected, at least for a time, in several cases. It is well to know that the application of the ointment produces, for some hours afterwards, more or less acute pain, which lasts from twelve to fourteen hours with intensity. According to M. Bernard, the pain seemed several times owing as much to the plugging of the vagina, and the compression of neighboring organs as to the action of the caustic. The whitish exudation, which was mentioned above, is generally formed at the end of five, six, or seven hours. The process of elimination, the cicatrization of the wound consecutive to the separation of the eschar, and the resolution of the concomitant inflammatory tumefaction requires about eight to ten days. It is, therefore, advisable generally to observe this interval between two applications.—(*Gaz. Hebdomad.*, May 21, 1858, from *Moniteur des Hôpitaux*, t. v., No. 140.)

VIII. *Thrombosis of the Cerebral Sinuses in Children.* By DR. GERHARDT, of Würzburg.

Thrombosis of the cerebral sinuses, in consequence of caries of the petrous portion of the temporal bone in adults, was first noticed by Lebert. He states, however, that of three hundred post-mortem examinations in children, he has not met with a single case of this disease. In ninety-six autopsies of children, Dr. Gerhardt observed seven cases of the disease, all of them occurring in infants less than six months old. Of the three cases, which he describes at length in his paper, we will present only one for the sake of illustration.

A foundling, eight weeks old, nourished artificially, suffered from a profuse diarrhœa, in consequence of which it was very much emaciated. Its skin was loose, and easily thrown into folds; dullness on the back of the chest on percussion, especially on its right side; consonant rales in some places; frequent laborious respiration; much cough; pulse and impulse of heart hardly perceptible; intense cyanosis, particularly of the face; highly distended vessels running from the large fontanelle to both temples. Murmurs of respiration and pulsation not perceptible at the head; pupils very much contracted; unconsciousness, amounting almost to lifelessness, interrupted only from time to time by cries and movements produced in the course of the examination. External jugular vein on the right side very little, on the left very much distended; distension increased on crying. No change in the symptoms until death.

Autopsy.—Slight atelectasis and limited hepatization of the lungs; tumefaction of the solitary follicles of the large intestines; membranes of the brain much reddened; the superior sinus longitudinal; right transverse sinus and several veins of the right hemisphere entering the former filled with thrombi, which were partly adherent, mostly hard, only in some places softened in their interior; brain soaked in effusion. From all the reported cases the following results may be inferred:—The disease is observed in children during the first three months of their lives; the subjects of it are badly nourished, and emaciated, complain of gastric disturbances, particularly diarrhœa; quick and intense collapse; feebleness; then failing of pulse, and cyanosis. The bones of the skull overlap each other, and the large fontanelle is sunken in. In the course of the disease, supervene loss of consciousness, disturbed innervation of the muscles of the eye, flexion of the neck, opisthotonos, rigidity of muscles, and death. The author sums up the diagnosis in the following:—

"If we observe in children violent cerebral symptoms following an acute catarrhal affection of the stomach and intestines, and then find that one of the jugular veins is collapsed, and the other highly dilated, both having had normal dimensions previous to the disease, and if this symptom presents itself with some distinctness and constancy, we are justified in diagnosticating thrombosis of the cerebral sinuses; and we will always find that side alone affected, or most so, upon which the vein is collapsed. We dare not, however, positively exclude the existence of thrombosis in case of absence of this symptom."

For the treatment of this disease the author recommends principally a good and proper nourishment. The recorded cases were treated chiefly with opium. As we see, however, from the foregoing, that thrombosis of the cerebral sinuses is observed generally in very young children, occurring together with diarrhœa, these observations, to which we draw the attention of practitioners, should serve as another warning in regard to the use of opium in early infancy, considering how easily it produces congestion of the brain.—(*Schmidt's Jahrbücher*, 1858, No. 4, from *Deutsche Klinik*, 1857, Nos. 45, 46.)

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Bi-Monthly Periscope.

SURGERY.

Excision of Bones and Joints.—[The following interesting statistical report of forty-three cases of excision of bones and joints, as occurring in the British Provincial hospitals during the year 1857, we extract from recent numbers of the *Medical Times and Gazette*. It will be seen that in fifteen cases the knee-joint was resected. Of these cases, there were six cures and four deaths; three cases, at time of report, were still under treatment, and doing well, while two were subjected to amputation three months after the primary operation. The results of this operation on the elbow-joint are far more favorable: thus, of seventeen cases, thirteen recovered, two died, in one amputation was performed, and one was still under treatment.]

Case 1.—The Bradford: Mr. Mead.—A fairly healthy lad, aged 19. Excision of the knee-joint on account of chronic synovial disease. Death from pyæmia on the thirteenth day. *Case* 2.—The Bradford: Mr. Mead.—A man, aged 47, in fair health. Excision of the scapula and head of humerus on account of malignant disease. There was considerable hemorrhage during the operation. Death from exhaustion two hours afterwards. *Case* 3.—The Leeds: Mr. Smith.—A girl, aged 20, of healthy appearance, for two years the subject of diseased elbow-joint. Several fistulous openings existed. Excision of the entire joint in the usual manner. Recovery. In this case cicatrization was complete within a month. *Case* 4.—The Liverpool: Mr. Bickersteth.—A strumous boy, aged 10, the subject of diseased elbow-joint. There were three or four sinuses around the joint, and the bones were extensively diseased. A free incision was performed, the H-incision being adopted. Recovered well. *Case* 5.—The Liverpool: Mr. Long.—A man, aged 25, in poor health. The subject of disease of the shoulder-joint. The joint was stiff, and several sinuses, both in front and behind, led into it. After some preparatory treatment, excision of the head of the humerus was performed. In the attempt to displace the head of the bone from the glenoid cavity, the shaft broke through at the insertion of the deltoid. The head of the humerus was found to be firmly anchylosed to the glenoid cavity, and some little trouble was required for its removal. The man did well. The fractured bone united firmly, and a fair amount of motion in the false joint was retained. Two sinuses still existed at the time that he was sent into the country for change of air. *Case* 6.—The Liverpool: Mr. Bickersteth.—A healthy lad, aged 12, the subject of disease of the elbow-joint. Excision of the joint by the H-shaped incision. Recovery, with a fair amount of motion. *Case* 7.—The Royal Berkshire Hospital.—A cachetic woman, aged 29, the subject of diseased shoulder-joint. Her strength failing, excision was determined on. The operation was performed in the usual manner; the head of the humerus was found extensively carious. The glenoid cavity was gouged. She suffered for some days from the shock of the operation, but afterwards did well. She was the subject of enlargement of the liver, and there was also a suspicion of lung disease. She left the hospital on April 24, the operation having been performed on March 12. The wound never entirely healed; death took place early in June. No autopsy. *Case* 8.—The Royal Berks.—A young woman, aged 23, in good health, but the subject of disease of the hip-joint of two years' standing. The disease had been acute only for three months, and was rapidly undermining her health. A single sinus in the thigh discharged profusely. After various measures of treatment, excision of the head of the femur was performed four months after her admission. The acetabulum was found much diseased and required free gouging. A finger could be passed through it into the cavity of the pelvis. She recovered well from the shock of the operation, but no reparative action was set up, and death took place on the fourth day. *Case* 9.—The Leeds: Mr. Teale.—A lad, aged 19. Excision of the elbow-joint, on account of chronic disease. The soft parts were much infiltrated and swollen, and healing consequently progressed slowly. Passive motion was commenced about a month after the operation. Recovery. *Case* 10.—Addenbrooke's: Mr. Humphry.—A healthy man, aged 31, for three years the subject of diseased ankle-joint. A complete excision was performed, the upper surface of the astragalus, and the lower end of the tibia, with both malleoli, being sawn away. No ill symptoms followed. Seven months afterwards the parts had healed, but the leg was still weak. *Case* 11.—Addenbrooke's: Mr Humphry.—A girl, aged 5, in delicate health, the subject of acute suppuration of the knee-joint, following old-standing disease of the patella. Excision of the joint. Diarrhœa was set up the next day, and continued to the time of death; death occurred on the twenty-second day, having been preceded by swelling of several of the joints. No autopsy was allowed. *Case* 12.—Addenbrooke's: Mr. Humphry.—A healthy laborer, aged 25, the subject of diseased knee-joint, following the kick of a horse. Excision of the joint. At first the case progressed very well, but subsequently abscesses formed about the bones. Seven months afterwards there were still some discharging sinuses, but the bones had firmly united. *Case* 13.—Addenbrooke's: Mr. Humphry.—A pale, unhealthy-looking man, aged 25, with disease of the knee-joint of three years' standing. Excision of the joint was performed. In the operation commencing ulceration of the cartilages was found, and numerous small polypoid growths from the synovial membrane; the latter were all removed. Erysipelas of the leg followed, and abscesses formed about the seat of the operation. Amputation through the thigh three months after the excision. Recovery. *Case* 14.—Addenbrooke's: Mr. Humphry.—A delicate lad, aged 10, for a year the subject of diseased knee-joint. There was an abscess in the ham, communicating with the joint. Excision of the joint. The edges of the wound separated, exposing a large suppurating surface. His health giving way, amputation through the thigh was performed three months after the excision. He recovered well. *Case* 15.—The Derby: Mr. Fearn.—A feeble lad, aged 18, the subject of diseased wrist. Excision of the diseased articular surfaces. Some sinuses still existed at the time he was made an out-patient. *Case* 16.—The Derby: Mr. Fearn.—A delicate girl, aged 16, the subject of disease of the elbow-joint. Excision of the joint. The disease extended, and amputation through the arm was performed a month afterwards. She recovered well. *Case* 17.—The Liverpool: Mr. Long.—A healthy-looking lad, aged 16, the subject of diseased elbow-joint, resulting from a blow a year ago. The actual cautery had been applied with marked benefit, but the disease still existed. The H-shaped incision was practiced, and the ends of the bone removed. He made an excellent recovery, and in less than three weeks could put his hand to his mouth; and in another three weeks could flex and extend the forearm quite freely. *Case* 18.—The Liverpool: Mr. Bickersteth.—A strumous lad, aged 18, the subject of old-standing disease of the elbow-joint. There were three or four sinuses which communicated with the joint. The H-incision was practiced, and the ends of the bone removed. The boy did well, and was discharged in much-improved health, and with fair motion in the elbow. *Case* 19.—The Liverpool: Mr. Bickersteth.—A feeble woman, aged 56, the subject of diseased elbow-joint. Excision of the articulation. The parts had nearly healed, when the patient's health failing, her friends removed her from the hospital. She shortly afterwards died. *Case* 20.—The North Staffordshire: Mr. Ball.—A girl, aged 12. Excision of the elbow-joint. Recovery, with good motion in the joint. *Case* 21.—The Staffordshire General: Dr. Masfen.—A healthy man, aged 37, the subject of diseased knee-joint. Excision of the joint, the patella being left. Death from exhaustion on the twenty-first day. *Case* 22.—Addenbrooke's: Mr. Humphry.—A girl, aged 18, pale, but in tolerable health, for seven years the subject of diseased knee-joint. The disease had been much aggravated by a sprain received three weeks before admission. There was much swelling, but no abscess had ever formed. Excision of the joint was performed. The patella, as well as the extremities of the two bones, was removed. The synovial membrane was found thickened; the cartilages were extensively ulcerated, and the ends of the bone were united by firm fibrous bands. Profuse suppuration followed the operation, but the wound gradually closed. Six months afterwards several sinuses still remained open. Under treatment. *Case* 23.—Addenbrooke's: Mr. Humphry.—A healthy woman, aged 27, was admitted with chronic disease of the knee-joint, consequent on a kick received nine years before. Excision of the joint was performed on October 25. The patella was removed, and the synovial membrane, which was much thickened, was dissected away; scarcely any suppuration followed, and the healing process was remarkably rapid.

She was up within six weeks of the operation, and was discharged at the end of the tenth week, the bones being firmly united. *Case* 24.—The Hull: Mr. Craven, Jr.—A strumous lad, aged 9, had suffered from disease of the right knee for two or three years. Excision of the joint was performed, the long semilunar incision being adopted; the patella was not removed. The case progressed well, and at the date of report anchylosis was almost complete. Under treatment. *Case* 25.—The Hull: Mr. Huntingdon.—A healthy man, aged 30, was admitted in consequence of an injury to his elbow-joint, inflicted by a circular saw. The olecranon process and the inner condyle of the humerus were cut through, but the vessels were uninjured. Mr. Huntingdon sawed off the other condyle, and removed also a further portion of the ulna and the articular surface of the radius. The arm was laid in a straight splint for three weeks, and afterwards placed on an angular one. The parts healed well, and a good amount of motion was secured in the new joint. *Case* 26.—The Dundee: Dr. Crockatt.—A strumous man, aged 20, was admitted, with disease of the right elbow-joint, consequent upon an injury. The joint was excised in the usual manner, and a good recovery, with a slight motion in the new joint, ensued. The articular surface of the ulna, and the lower end of the humerus, were extensively ulcerated. *Case* 27.—The Brighton: Mr. Lowdell.—A girl, aged 14, the subject of strumous disease of the elbow-joint, of eighteen months' duration. Excision was performed in the usual manner, and a good recovery followed. She left the hospital three months after the operation, having then a fair amount of motion in the joint, which was daily improving. *Case* 28.—The Glasgow.—A strumous boy, aged 10, the subject of chronic disease of the hip-joint. Excision of the head of the femur. Recovery. *Case* 29.—The Glasgow.—A man, aged 33, in good health. Primary excision of the ankle-joint, in consequence of a compound dislocation. Recovery. *Case* 30.—The Glasgow.—A strumous girl, aged 15, the subject of chronic disease of the elbow-joint. One ankle was also affected. Excision of the elbow was performed, but the child sank under hectic exhaustion at the end of the second month. *Case* 31.—The Glasgow.—A boy, aged 15, the subject of strumous disease of the elbow-joint. Excision. Recovery. *Case* 32.—The Glasgow.—A boy, aged 11, for nine months the subject of strumous disease of the elbow-joint. Excision. Recovery. *Case* 33.—The Glasgow.—A girl, aged 18, for four years the subject of strumous disease of the knee-joint. She was in much reduced health. Excision of the joint was performed in the usual way on July the 9th. A good recovery followed, and the consolidation of the parts was complete by the middle of December. Her general health had much improved, the anchylosis was perfect, and she could bear weight on the limb; the shortening was about an inch and a half. *Case* 34.—The Glasgow.—A boy, aged 10, for four years the subject of diseased knee-joint. Excision in the usual manner on December 28. At the date of report the case was doing well. *Case* 35.—The Glasgow.—A man, aged 33, was admitted with a compound dislocation of the elbow-joint, caused by a fall from a scaffold. The heads of the radius and ulna were broken, and were excised. The articular surface of the humerus was not interfered with. Recovery, with complete anchylosis, resulted. *Case* 36.—The Glasgow.—A man, aged 27, was admitted on November 3d, having had his elbow-joint opened by a circular saw; the olecranon and lower end of humerus had been injured, and were consequently removed. At the date of report the case was doing well. *Case* 37.—The Liverpool Royal: Mr. Bickersteth.—A delicate-looking boy, aged 11, the subject of diseased knee-joint. Excision was performed; the semilunar incision being adopted. The joint was found quite disorganized; the cartilages being almost wholly gone. The patella was not removed. A profuse discharge followed, and the boy was for some time in a critical condition. At the date of report there seemed good reason to hope the limb would be saved. *Case* 38.—The West Norfolk: Dr. Cotton.—A thin, spare woman, aged 45, was admitted with the intention of submitting to amputation of the thigh on account of diseased knee-joint. The disease had existed twenty-five years, and there was a large ulcer with fungoid granulations on the inner side of the joint. Excision of the joint was performed in the usual manner on September 28. She recovered well; and at the date of report was able to bear considerable weight on the limb. *Case* 39.—The West Norfolk: Dr. Cotton.—A delicate girl, aged 16, was admitted with chronic enlargement and contraction of the keee-joint: the disease was of nine months' duration. The joint was excised in the usual manner on September 28. For some time she appeared to be doing well, but she subsequently sank into a state of extreme anæmia, and so died in the beginning of the ninth week. Anasarca had been present during the last few weeks. The autopsy showed no disease of either lungs, heart, or kidneys, nor were there any evidences of pyæmia having existed. No osseous union had taken place between the extremities of the bones. *Case* 40.—The West Norfolk: Mr. Kendall.—A girl, aged 3 years, the subject of strumous disease of the knee-joint for more than twelve months. Excision of the joint was performed, and she made an excellent recovery. At the date of report she was able to bear weight on the limb. *Case* 41.—The Queen's Hospital, Birmingham: Mr. Sands Cox.—A healthy boy, aged 3, was admitted on account of a bony growth occupying the lower part of the scapula: it had been gradually increasing for two years. Mr. Cox excised the whole of the bone beneath its spine, by means of a chain-saw passed under it. No vessels required ligature, the hemorrhage being arrested by pressure. The tumor proved to be a flat-based exostosis. The healing was retarded by an attack of erysipelas. He was discharged well six weeks after the operation. *Case* 42.—The Leeds: Mr. Teale.—A boy, aged 9, the subject of diseased tarsus. The os calcis, and the greater part of the astragalus were excised. The suppuration was profuse for some weeks, but at length the parts healed well. At the time of discharge from the hospital, only a very small sinus remained. *Case* 43.—The Glasgow.—A boy, aged 8. Excision of the os calcis on account of strumous disease. Recovery.—*Med. Times and Gazette,* May 8th and June 5th, 1858.

PRACTICE OF MEDICINE.

OBSERVATIONS ON THE USE OF THE SHOWER-BATH IN DELIRIUM TREMENS, AND OTHER SIMILAR CASES OF CEREBRAL EXCITEMENT. By *Robert Law, M.D.*, Professor of the Institutes of Medicine in the School of Physic in Ireland, etc.—The following observations were made when delirium tremens was a very common disease among us. Subsequently the "temperance movement" produced such a change in the habits of our countrymen, among whom this disease chiefly prevailed, that an instance of it seldom presented itself to the physician. I felt that the time for the recommendation of any therapeutic agent applicable to the disease had gone by. But, unhappily, the effects of the temperance movement were but temporary. Intoxicating liquors are now as freely used as they ever were, and delirium tremens is now as common as it ever was, and a remedy of any value in it is now as well deserving of being made known as it ever was.

It will be readily admitted that in no case, and under no circumstances, does cerebral excitement assume so formidable an aspect as it does not unfrequently in delirium tremens, and there is no case where high excitement is oftener attended with speedily fatal collapse. I shall not soon forget a case which supplied me with an illustration of this fact. I admitted into the hospital a young man whose friends, that accompanied him, declared to be affected with delirium tremens. He answered questions most coherently, and in such a way that I should have doubted the truth of their statement respecting him, were I not well aware how often the disease is suspended during the day to break out with violence at night. This proved to be the case in the present instance: the person so tranquil during the day became so outrageous at night that he was obliged to be placed in a separate apartment, and required the porter to remain with him to keep him quiet. About midnight he made a strong effort to get out of bed, but after a long struggle the porter succeeded in mastering him, and left him, as he supposed, disposed to sleep. He returned in two hours, and found him quite dead. Nor is this a solitary instance, in my experience, of sudden sinking very speedily following upon the excitement of delirium tremens. The delirium caused by the excessive or continued use of ardent spirits has long since proved itself refractory to the treatment ordinarily and successfully employed against it when occurring under other circumstances, and in other diseases. Although opium may be considered to be its general remedy, yet many are the cases in which it not only fails to be useful, but, I am persuaded, has been productive of positive mischief. Tartar emetic, either alone or combined with opium in varying proportions, although it, too, has often been successfully employed against it, yet, in many instances, has disappointed my expectations. It was the failure of these means, and the feeling of the necessity of adopting some means calculated to produce an immediate impression upon a disease that did not admit of delay, that suggested to me the shower-bath. Nor was it alone in cases of pure delirium tremens that I used it, but also in the delirium of fever, in persons addicted to the use of ardent spirits. I shall now detail some cases to exhibit the effects of it.

CASE I.—Frederick Bridge, aged thirty-two, writing-clerk, admitted into hospital January 31st. For a week previous to his coming into hospital he exhibited a peculiar fidgety, restless manner, and, three days ago, when getting out of bed, he fell down in a fit, attended with convulsions, from which he soon recovered, and into which he relapsed three times at very short intervals. He is reported not to have slept for several nights. He is said not to be a determined drunkard, but has seldom confined himself within the strict limits of sobriety. He was reported to have passed the night previous to his admission, running through the house, hunting animals, the creatures of his disordered imagination. Phenomena on admission:—Pulse 126, feeble; skin cold and clammy; a restlessness of manner. He has no headache, nor suffusion of eyes, nor flush of face. Tongue clean and tremulous. He has a general tremor of the body. He was ordered to take a tablespoonful of the following mixture every hour until sleep resulted:—Camphor mixture, five ounces; muriate of morphia, two grains; spirit of nitrous ether, two drachms; and syrup of lemons, six drachms; and to have a tumbler of punch, his favorite beverage.

February 1st. He was very much excited during the night, and scarcely remained an instant in bed, pulling and tossing everything about. Pulse fuller and stronger; head hot; he has taken one bottle of the mixture, and half of another, without exhibiting the least appearance of being under its influence. To have six grains of tartarized antimony added to the mixture. Let him have a cold shower-bath immediately.

2d. 11 o'clock A.M. He is in a most tranquil sleep, without any stertor. He got the shower-bath at 4 o'clock yesterday, and almost immediately afterwards fell into the sleep in which he now is. 1 o'clock P.M. He has now just awoke; his mind is quite collected; he has no headache, no tremor of the body; pulse 90, soft and regular. He has, in a very remarkable degree, the peculiar fusty smell which we so often perceive in such cases. In order to make assurance sure, I directed his medicine to be repeated.

3d. He continued perfectly composed, without even any confusion of mind, and has had a quiet, tranquil night.

4th. Convalescent.

CASE II.—James Connor, aged forty-two, a habitual drinker of ardent spirits and punch, but seldom to intoxication, was admitted into hospital, late yesterday evening, April 27. He raved incessantly all night about his occupation of clothes-vender. Present phenomena:—Pulse 114; skin moist and clammy; eyes suffused; tongue covered with whitish slimy mucus; head hot; bowels torpid. He has had leeches applied to his temples before admission. He was ordered to take an ounce of the following mixture every third hour:—Camphor mixture, seven and a half ounces; tartar emetic, four grains; vinegar of opium, twenty-five drops; and spirit of nitrous ether, half an ounce. A cold shower-bath immediately. Should his condition be not improved toward evening, let six leeches be applied behind each ear, cold wash to the forehead, and his legs be stuped.

28th. He has had a most quiet, undisturbed night, without any delirium. Immediately after he got the shower-bath he fell asleep, and slept for three hours. When he awoke he requested to have the shower-bath repeated, and, after getting it, he again fell asleep, and did not awake through the night. He got the medicine but twice, nor was anything else done for him. Pulse 120; tongue white and slimy. I neglected to mention that he was ordered a turpentine enema, which freely affected his bowels. To take an ounce every third hour of the following mixture:—Camphor mixture, seven and a half ounces; spirit of nitrous ether, half an ounce.

29th. He slept well through the night; pulse less frequent; tongue cleaner.

May 1st. He perspired freely through the night; tongue quite clean. Convalescent.

Case III.—An elderly man, Reilly, had been under my care in hospital for some time, laboring under an obstinate cutaneous affection, when he exhibited symptoms of fever which prevailed in an epidemic form at the time. When I came to see him in the morning, the nurse told me that he had not slept an instant during the night; that his tongue had been going incessantly, uttering the most incoherent nonsense. I found him in the same loquacious mood. His face was flushed, and eyes suffused; skin hot and dusky; pulse very rapid and small; tongue red and dry. For a short time previous to the exhibition of these symptoms he had been affected with diarrhœa, which had yielded to medicine. Reilly's habits not having been the most temperate, coupled with the character of his delirium, led me to regard his case as one of the prevailing epidemic typhoid fever, modified by delirium tremens. I accordingly directed for him the following medicine:—Camphor mixture, seven and a half ounces; spirit of nitrous ether, three drachms; vinegar of opium, thirty drops; tartar emetic, one grain; mix: two tablespoonsful to be taken every third hour. Shower-bath immediately. As I apprehended that he would be chilled by the bath, I directed for him a hot drink immediately afterwards and a jar of warm water to be applied to his feet. He was seized with a slight rigor, but which soon ceased. In a very short time after he had the bath, and had taken one dose of the medicine, he fell asleep, and awoke with his mind quite composed, after having had four hours of refreshing sleep. He now went regularly through a tedious fever, but had no return of delirium. His exhaustion was extreme, and he required to be supported by stimulants, wine, ammonia, etc.

Case IV.—James Nugent, aged thirty-four, locksmith, admitted into hospital June 13, exhibiting the following symptoms:—Pulse 130, full and strong; tongue clean; a nervous tremor of the entire body; profuse general perspiration; eyes not suffused. He had been but a very short time in the hospital when he became so violent as to require to have the strait-waistcoat immediately put on. The account that the friends who accompanied him to the hospital gave of him was, that he had been drinking for several days, and afterwards, while at breakfast, he was suddenly seized with a kind of fit, and lost all consciousness; his stomach then became sick; he had a return of the fit, and then became delirious. He was ordered to take every third hour an ounce of the following mixture:—Camphor mixture, five and a half ounces; tartar emetic, six grains; spirit of nitrous ether, three drachms; tincture of opium, thirty drops; mix. Cold shower-bath immediately, and let it be repeated in the evening, if necessary.

14th. Pulse 78, soft. He is perfectly tranquil and collected at present, and quite conscious of his position. He felt immediately refreshed by the shower-bath. His skin is cool; eyes slightly injected. The medicine caused no sickness. The mixture to be repeated; the tincture of opium to be diminished to twenty drops.

15th. Pulse 78. He is quite collected, and slept well during the night.

16th. Is quite well.

This individual came under my care again under similar circumstances, and so conscious was he of the benefit he before derived from the shower-bath, that he begged he might have it again. His request was complied with, and with as beneficial effects as before. He became perfectly quiet, and slept.

CASE V.—John Maguire, aged thirty-five, of intemperate habits, was brought to the hospital in a state of the highest excitement. The account given of him by his friends was, that he had been laboring under a violent pain in the calf of his left leg, which seized him suddenly, without his having received any external injury; that he had applied to a surgeon, who directed for him a liniment which he rubbed to his leg; that the pain left his leg, but he was soon after seized with pain in the head, and then became violently excited. Of this excitement there had been no abatement from the time of its commencement until he was admitted into hospital. We were obliged to put the strait-waistcoat on him immediately to control him, as otherwise it would have been utterly impossible to have kept him in bed. His appearance exhibited great wildness, nor would he give us the least information as to whether he felt any pain or uneasiness. I directed a cold shower-bath for him at once, and ordered him to have the following mixture:—Camphor mixture, seven ounces; tartar emetic, four grains; sedative liquor of opium, thirty drops; syrup of saffron, one ounce; mix: one ounce to be taken every third hour. After he got the shower-bath the strait-waistcoat was not again put on him, nor was there any necessity for it; he became perfectly tranquil, and confessed himself relieved from a most distressing headache, which he now admitted that he had. After about four hours he felt the pain of his head returning, when he requested that he might again have the shower-bath. It was repeated, and shortly afterwards he fell asleep, and enjoyed a night of uninterrupted rest. He had no return either of headache or delirium; and in a few days he was quite well.

I shall content myself with the details of one more case, which strikingly proved the tranquilizing effect of the bath when the patient was under the highest degree of excitement.

CASE VI.—Matthew Jones, aged forty-five, waiter in a hotel; of intemperate habits, although he was reported not to have exceeded lately; for a week previous to admission, was under treatment for an affection of his chest. I had no opportunity of seeing him until the day after his admission into hospital, when I found him in such an excited state as that with difficulty could he be kept in bed. He had been constantly getting up in quest of whisky. He had no sleep during the night. His eyes were suffused; expression peculiarly wild; pulse 108, full and strong. He talks incessantly about his occupation as a waiter. I ordered him a shower-bath immediately, and afterwards to have the following mixture:—Muriate of morphia, two grains; camphor mixture, seven ounces; spirit of nitrous ether, three drachms; syrup of saffron, five drachms; mix: two tablespoonsful to be taken every third hour. He offered the most violent resistance to the shower-bath; however, the porter, after having received some hard blows from him, succeeded in giving it to him. He became perfectly quiet after it, and remained so for three hours, when he again became excited; the shower-bath was repeated, when he again became quiet and fell asleep, and awoke in the morning perfectly sensible. He had no return of delirium through his illness, and recovered so much that I indulged a hope of his final recovery; however, I soon perceived the fetor, both from his breath and from the sputa, that announced gangrene of the lung, and discovered a large cavity, indicated by pectoriloquy, gargouillement, and cavernous respiration under the right clavicle. He soon began to sink, and died about ten days from the time of his admission into hospital. Examination of the body exhibited a large cavity, whose internal surface was irregular and sloughy, and which occupied the entire of the upper lobe of the right lung. The left lung was quite healthy.

I deem it superfluous to adduce more cases to prove the efficacy of the shower-bath in allaying cerebral excitement, and procuring sleep in delirium tremens. Nor is my experience of its value confined to pure delirium tremens; I have found it no less efficacious in the delirium of fever, when the subject of it has been of intemperate habits, and in whom the fever has been modified by the delirium tremens. In some of these cases, where there has been much prostration of strength, and the pulse very feeble, I have deemed it a measure of prudence to have at hand either a stimulating draught, composed of camphor mixture, ether, and aromatic spirit of ammonia, or hot punch, or mulled wine, to give to the patient immediately after his getting the bath, to prevent an injurious chill, and to promote reaction. I also have directed a jar of warm water to be applied to the feet, and the legs to be wrapped in hot flannels. With these precautions I have not seen a single instance of injury resulting from the bath, and have proved its most beneficial effects even in cases in which the fever has been of a low typhoid type, with the surface covered with petechiæ. Nor have I been deterred from using the bath when an affection of the chest has been present; I have only in such cases thought it prudent to have the chill taken off the water. In many cases I have found it necessary to repeat the bath from the excitement only being suspended by its single administration; and even in some cases, when the excitement has not returned, but has left behind it a wakefulness, I have found its repetition procure sleep. The patient generally experiences great relief from it. Maguire felt that the violent pain of his head at once left him after it. When the shower-bath could not be so readily procured, or where some circumstance connected with the patient hindered his getting it, I have derived considerable advantage from pouring a large quantity of cold water on his head, held over a vessel placed beside the bed. I am not aware of the shower-bath having been employed under the circumstances that I have here recommended it. And I do venture to recommend it with the utmost confidence. Nor need its use interfere with any other means that we may wish to employ. We can, at the same time, exhibit either opium simply, or combined with tartar emetic, as the circumstances of the case may seem to require. I would attribute the advantage of the bath in these cases to its threefold effect, viz.: first, the shock; second, its diverting from the head; and third, determining to the surface generally. I impute no small share of the benefit to the shock; it produces a sudden and strong impression, and seems, as it were, to cause a revolution in the train of morbid action; while the sedative effect of the cold applied to the head, relieves it, and from a partial produces a general determination to the surface, and thus restores the balance of the circulation.—*Dublin Quarterly Journ. of Med. Science*, Feb. 1858.

OBSTETRICS.

1. ON MENSTRUATION DURING PREGNANCY. *By Dr. Elsässer.*—This contribution to a disputed topic is founded upon fifty cases, extracted from the journal of the Stuttgart Lying-in Hospital—cases which are said to rest upon the most certain information. The subjects were fifteen primiparæ and thirty-six pluriparæ, who, with the exception of two women, (aged 36 and 41) were between 20 and 30 years of age. Of the fifty-one children born, thirty-four were boys and seventeen girls; thirty-six being mature and fifteen immature. The menstruation during pregnancy occurred in fifty women, in the following manner:—Once in eight, twice in ten, three times in twelve, four in five, five in six, eight in five, and nine in two. In thirteen cases the peculiarities of the rhythm of the discharge were inquired into, and the rhythm was found regular in four; in one it occurred at the sixth week; in three there were pauses between the epochs; in two the menstruation first appeared after the second month; in two after the fourth; and in one after the fifth month. In one case the menstruation first appeared in the middle of gestation, and henceforth came on every four weeks, lasting three or four days. The child, perceived but feebly at first, was strongly felt during the last four or five weeks. Hemorrhage occurred twice within a week before delivery, but a mature, living infant was born. Indications as to the amount of discharge were furnished in twenty-six cases, and in eighteen of them it was less than in the non-pregnant condition. The weight of the thirty-five mature infants varied from five pounds to nine pounds.

Dr. Elsässer observes that, although he is unable to state the proportion of cases in which menstruation occurs during pregnancy, it is by no means so exceptional an occurrence as supposed by some authors. It occurs more frequently in pluriparæ than in primiparæ; and it takes place much more frequently during the first half of pregnancy, and especially in the earlier months of this, than during the latter half. The amount of discharge, too, is smaller than in normal menstruation. The duration of the pregnancy was normal in more than two-thirds of these cases (thirty-six,) while in nearly one-third (fourteen) of the cases it was interrupted; in four during its first, and in ten during its latter half. As regards the development of the child, which by some authors has been supposed to be impeded by the occurrence of menstruation, this was found to be normal, or more than normal, in three-fourths of the cases.—*Monatschrift für Geburtskünde, band* lxxiii. pp. 401–408.—*Med. Times and Gazette,* April 24, 1858.

2. OBSERVATIONS ON THE BENEFICIAL EFFECTS OF PEPSIN IN THE OBSTINATE VOMITING OF PREGNANCY. *By Dr. L. Gros.*—In a great majority of cases the vomiting of pregnancy may safely be left to the influence of time; but there are some cases in which females are scarcely able to retain in their digestive system a sufficient amount of nourishment to support their existence, and are therefore reduced to the last degree of emaciation. In some, also, the shocks occasioned by this obstinate and repeated vomiting become the source of abortions, which might have been prevented by moderating the activity of the morbid phenomenon. A very remarkable case was related in 1856, by M. Teissier, Professor of Clinical

Medicine at Lyons, showing the immediately beneficial effects of a dose of pepsin in a case of vomiting during pregnancy. In this case the symptoms resisted all the ordinary methods which were employed, and the patient was unable to retain in her stomach any substance whatever. Under these circumstances, the patient was brought to M. Teissier, who found her in the following condition:—The vomiting had continued for two months, and she was at the end of the fourth month of her pregnancy; she presented the appearance of a skeleton, having the aspect and the cough of a phthisical subject; the pulse was 140, and M. Teissier thought at first that the case was one of pulmonary tubercle. Finding that all treatment had been hitherto inefficacious, and that the lady was fast actually dying of inanition, he was seriously meditating upon the propriety of inducing abortion as a means of saving her life; but as a last resource, before operating, he determined to employ pepsin. He accordingly prescribed one gramme, to be divided into two doses, and taken every day in a spoonful of broth. At the very first dose the broth was retained, and from that moment the vomiting never returned. On the third day the lady ate some chicken, and then some beefsteak. The treatment was continued in the same manner for three weeks, and at the end of that time the cure was complete; the emaciation was replaced by *embonpoint*, the fever and the cough ceased with the vomiting, and at the end of the nine months the lady was safely delivered.

Dr. Gros then relates six other cases in which the pepsin was employed with the same success, and he thinks himself warranted in concluding that pepsin undoubtedly produces good effects in the vomiting which attends pregnancy. He explains the results by supposing that, although in the first instance the vomiting is due only to the sympathy existing between the uterus and the stomach, yet subsequently the stomach itself becomes affected, as is proved by the fact that in the beginning of pregnancy the vomiting occurs only in the morning or the evening; but in aggravated cases it supervenes at every meal, and all alimentary matters are rejected. In such cases, therefore, when the stomach has taken on a morbid habit, and exhibits an alteration of secretion, the pepsin appears to be really indicated; although, in a merely sympathetic action between the uterus and stomach, it would be difficult to explain the efficacy of its action.—*Bulletin Général de Thérapeutique*, Feb. 15, 1858.—*British and Foreign Med.-Chir. Review*, July, 1858.

3. ON THE CARBONIC ACID GAS DOUCHE IN UTERINE DISEASE. By *M. Charles Bernard*.—Dr. Bernard reports very favorably of some trials he has made of Dr. Simpson's treatment of painful affections of the uterus by injections of carbonic acid gas. Of his successful cases he relates eight of the most marked, four being examples of advanced and very painful cancer, and four examples of engorgement or painful congestion of the cervix. The gas has been, however, employed in other cases in which no amelioration has attended its use, an aggravation of suffering being produced in one of them.

In all the patients, besides the local anæsthetic effect, more or less of general accidents were observed, these being usually very slight, but in one case so considerable as to compel the discontinuance of the remedy. They consisted in cephalalgia, giddiness, weakness, or confusion of vision, nausea, general lassitude, and more or less complete somnolence. After the third or fourth injection the patient complains of cephalalgia, and especially of somnolence, these increasing day by day, but usually soon passing off, except a slight abiding headache. In the case in which these symptoms persisted, they entirely resembled those of incomplete asphyxia from carbonic acid gas. These symptoms are, no doubt, due to the absorption of the gas. The general conclusions, then, are—1. Injections of carbonic acid gas constitute a powerful anæsthetic, and cause a rapid diminution of pain in an engorged or cancerous state of the cervix uteri. 2. In one case they seemed to expedite the resolution of a simple engorgement, and in another, to diminish a cancerous ulceration. 3. But they sometimes give rise to general disturbances, which, scarcely noticeable in open cancer, are more or less marked in simple engorgement.—*Archives Gén.* tom. x., pp. 529–548.—*Medical Times and Gazette*, April 10, 1858.

4. LAUDANUM DRESSINGS IN PAINFUL AFFECTIONS OF THE UTERUS. By *M. Aran.*—M. Aran, in this paper, describes a means of locally applying laudanum, that he has found useful in several hundred affections of the uterus. The object being to retain this substance in contact with the os uteri and upper part of the vagina, a magma is produced by means of an inert powder. The cervix being exposed by means of the speculum, from thirty to fifty (and sometimes more) drops of laudanum are allowed to flow to the bottom of the instrument. After bringing the fluid in contact with the surface by alternately opening and closing the valves of the speculum, a few drachms of starch are placed at the bottom of the instrument by means of a spoon or spatula, so that the laudanum may become absorbed by this, and, this taking place very speedily, the speculum is then withdrawn. While this is doing the starch is kept in the vagina by charpie or cotton, which, indeed, may be left at the entrance of the vulva, if the size of this leads to the fear that the substance will fall out when the patient stands erect. Absorption takes place slowly, one hour, and sometimes three or four hours, being required before the first assuaging effect is perceived. No ill effects, whether from excess of narcosis or disturbance of digestion, have been observed. The application may be repeated every other day, or even every day, the patient in the interval well washing out the previously applied magma.

This dressing is applicable to those affections of the uterus and genital organs which, after active inflammation is subdued, still manifest a painful hyperæsthesia. But it is especially useful in the hyperæsthesia which sometimes accompanies uterine deviations, or the morbid adhesions contracted by the uterus with the other pelvic organs. In these cases of chronic cellulitis, as also in chronic inflammation of the ovary and the tube, it does good service by allaying morbid sensibility. In such cases a precise indication may be often sought for in vain, nothing indicating inflammation or congestion, or these having been subdued by local bleeding. A few laudanum dressings quickly bring relief, and that not for some days only, but for entire months. "I have found another morbid occurrence remarkably modified by these dressings, viz., a special condition of the entire uterus, frequently met with in women of a certain age, and which, perhaps, is in some cases connected with the formation of small fibrous tumors. In these patients the finger and the speculum fail to detect any sign of inflammation or congestion; and yet so excessive is the morbid sensibility, that a false step or violent shock excites sensibility on every side; in other words, it is a most complete state of hysteralgia; a few laudanum dressings soon allay this sensibility and pain, the patient exchanging in a few days a state of extreme suffering and uneasiness for one of remarkable comfort." M. Aran has made but little use of this means in ulcerated cancer, fearing hemorrhage from the employment of the speculum; but in non-ulcerated cancer and epithelioma and in fibrous tumors, this means has afforded more marked relief than any other he has tried. It does not cure these patients; but to afford them relief is to do much.—*Bull. de Thérap.* tom. liii., p. 481.—*Medical Times and Gazette,* April 3, 1858.

Editors' Table.

CHANGES AND APPOINTMENTS IN MEDICAL SCHOOLS.—Dr. J. H. B. McClellan, of this city, has been appointed to the Chair of Anatomy in the Pennsylvania Medical College, rendered vacant by the resignation of Professor Richardson. Dr. McClellan is the oldest son of the late Dr. George McClellan, the eminent surgeon, and principal founder of the Pennsylvania College. We congratulate the School upon the accession to its faculty of a gentleman of such distinguished *prestige* and acknowledged ability.

Dr. Eugene F. Colzey has been appointed to the Chair of Physiology in the Oglethorpe Medical College, at Savannah, Georgia.

Dr. Benson, of Chicago, has been elected Professor of Anatomy in the University of Louisville. This Chair had been rendered vacant by the transfer of Prof. Palmer to the Chair of Surgery. Dr. Lewis Rogers has resigned the Professorship of Clinical Medicine in the same institution, and Dr. Bemiss, our valued collaborator, has been appointed as his successor.

CHARLESTON MEDICAL AND SURGICAL JOURNAL.—A very decided improvement has taken place in the scientific and literary character of this Journal, as well as in its tone, since it has fallen into the hands of its present able Editor. The July number contains a number of original articles and reviews of marked ability. The work is evidently destined to take a high rank among the medical journals of the country.

SHELBY MEDICAL COLLEGE.—It will be perceived by our advertising sheet that the Faculty of this School is now fully organized. The name of Dr. Atchison, mentioned in our last number, does not appear in the announcement. Dr. Wright, late of the Memphis Medical College, occupies the Chair of Physiology and Pathology, and Dr. Maddin, of Nashville, that of Anatomy. The latter gentleman is a graduate of the University of Louisville, in the time of Drake, Caldwell, Short, Cobb, and Miller, and is said to be a superior lecturer.

TRIPLETS.—The following communication was sent to the Journal by Dr. J. Levergood, of Lancaster, Penna.:—

In the February and June numbers for 1856, of *The Medical Examiner*, the writer recorded the histories of two cases of triplet births, and also stated that, within the brief period of forty-eight months, Wrightsville, a town containing a population of less than fourteen hundred souls, had furnished three cases of the kind. Through the kindness of the attending physician, I am placed in possession of all the circumstances attending *another accouchement* of triplets in the above-named village, making the *fourth* in five years. I very much question whether the annals of obstetric medicine can furnish a parallel to this; indeed, it may as well be conceded at once, that, for "their generous fecundity," the ladies of Wrightsville stand pre-eminent and unrivaled. Having been requested to write a brief account of the last case, I shall do so, without any further prefatory remarks.

Dr. Geo. K. Thompson was called, on the 23d of June, 1858, to attend Mrs. C., aged about twenty-eight, in labor with her third child. The labor progressed favorably, head presenting, and, in a short time, a living female child was born. There being evidences of a second fœtus in utero, the membranes were ruptured—the presentation being that of the nates—and, in due course of time, a still-born female infant was born. It appearing from examination per vaginam that there yet remained another child to be cared for, the bag of waters was ruptured, the vertex ascertained to be the presenting part, and, in three hours subsequent to the birth of the first, a third still-born female child was delivered. The third stage of parturition was completed by the extraction of a single placenta. The recovery was speedy and perfect.

These cases were equally distributed among the medical practitioners of the town, the first occurring in the practice of Dr. B. C. Floyd, the second in the practice of the writer—who formerly resided in Wrightsville—and the third and fourth cases, in the practice of Drs. J. A. and G. K. Thompson. Of the twelve children, there were four males and eight females; and of the whole number there are but three living.

NEW MEDICAL JOURNALS.—We place, with great pleasure, the following journals on our exchange list:—*Maine Medical and Surgical Reporter*, edited by Drs. Richardson and Cummings; *Oglethorpe Medical and Surgical Journal*, edited by Drs. Boyd and Steele; *Savannah Journal of Medicine*, edited by Drs. Sullivan, Harris, and Arnold; *Medical Journal of North Carolina*, edited by Dr. Edward Warren.

PHILADELPHIA HOSPITAL, BLOCKLEY.—At the recent election for Chief Resident-Physician of this institution, Dr. McClintock was removed and Dr. R. K. Smith was appointed in his stead. No change has been made in the corps of Assistant Resident-Physicians. We speak advisedly when we say they are all rejoiced at getting rid of their late *chief*.

NAVAL APPOINTMENTS.—The Board of Naval Surgeons recently convened in this city, consisted of Surgeons Greene, President; Ruschenberger and Foltz, members; and Passed Assistant Surgeon Howell, Recorder. Twenty-seven candidates presented themselves for examination, of whom the following gentlemen were selected as qualified for the post of Assistant Surgeons in the United States Navy: Drs. Bertolette, of Pa.; Leach, of N. H.; Christian, of Va.; Megee, of Pa.; Gibbs, of N. J.; Burnett, of Pa.; and King, of Pa.

ARMY APPOINTMENTS.—The Army Medical Board met at Richmond, in April last, and selected but two of twenty-seven candidates who were examined Drs. J. H. Bill, of Pa., and J. H. Berrien, of Ga., were the successful candidates.

CORN AS AN ANTIPERIODIC.—The following is an extract from a letter written from Shanghai to Professor Dunglison, by Dr. D. B. Phillips, of the United States Navy, who is Surgeon, on the steamer "Mississippi," of our squadron at China. Prof. Dunglison has kindly placed it at our disposal:—

"Since writing an article upon the use of the uncooked and fresh meal of Indian-corn as an antiperiodic in intermittent fevers, I have had occasion to use it also in a case of very violent facial neuralgia of a periodic character, which refused to yield either to quinine, arsenic, or other antiperiodics, but rather grew worse. The corn-meal which I used was not fresh and coarsely ground (such as I had found to be best,) nor was it of the yellow kind—which seems to possess the strongest properties—but was finely ground, sifted, white, and evidently rather old. Yet, under all these circumstances, I found it to produce decided benefit, and to stop the paroxysms when everything else failed.

"I think the corn raised in Virginia, North Carolina, Kentucky, and Tennessee, and in similar latitudes, possesses stronger medicinal effects than that found farther north.

"I would be glad if you would give this remedy a trial. My mode of administering it, is to give two large tablespoonsful once every two hours during the day, and it is well to give it in a tumbler of water, stirred up in a gruel or wash. In the hot stages of intermittent fever, it may be given in ice water, and will be found to relieve thirst, and cool the skin sooner and better than any remedy I know."

CHAIR OF CHEMISTRY IN THE UNIVERSITY OF EDINBURGH.—The candidates for this highly honorable and lucrative position, rendered vacant by the death of Professor William Gregory, were, at first, Dr. George Wilson, Regius Professor of Technology in the same institution, and Dr. Thomas Anderson, Professor of Chemistry in the Glasgow University. Dr. Wilson, however, withdrew, leaving Dr. Lyon Playfair and Dr. Anderson the prominent candidates. On the 28th of June, the Town Council held an election, resulting in the choice of Dr. Playfair by a majority of sixteen votes. This appointment will doubtless be a source of gratification to the Alumni and students of the institution. Dr. Playfair is a fluent lecturer and a good teacher, being well versed in all the branches pertaining to chemical science.

SIR BENJAMIN BRODIE.—The Council of the Royal Society, London, have recommended Sir Benjamin Brodie to the Fellows as president of that most scientific body. As it is usual for those who are selected by the Council to be elected, Sir Benjamin will, in all probability, be placed at the head of a society of which he has always been a distinguished member. Not only is he the leading and most eminent surgeon of that great metropolis, but he also holds a high rank as a philosopher and a man of science, so that the Fellows of the society may feel proud of his election.

THE BRÉANT PRIZE.—It will be remembered that the late Mr. Bréant left a reward of £4000 to the discoverer of an undoubted remedy for, or prophylactic of, cholera. The Academy of Sciences, Paris, which has the supervision of the subject, has lately reviewed the report of the committee appointed to examine the claims of candidates. None of the one hundred and fifty-three essays which were submitted were thought worthy of the prize; but two attracted some attention. The head surgeon of the Smolensk Hospital, Russia, thinking cholera analogous to smallpox and typhoid fever, vaccinates all the patients at the onset of the epidemic. This mode, he claims, saves six out of seven patients. The other writer, who signs himself Mr. R., says that his cures are eighty per cent., and that he uses calomel in two or three-grain doses every two or five minutes, there being no danger of salivation.

NOVEL CURE FOR PHTHISIS, AND A NEW OPERATION OF CASTRATION.—In one of our Exchanges, *La Iberia Medica*, January 10th, 1858, will be found, under the caption of "Cure of Phthisis by Lightning," the details of a remarkable case, reported by Don José Otero y Ortiz, of San Cristóbal, Cuba. The following is an abstract of this case, which may be supposed to be merely an emanation from a lively imagination; or, it may be, that Spain is endeavoring to rival America in remarkable cases. "Credat Judæus Appella, non ego."

A man, thirty-one years of age, suffering from pulmonary consumption, characterized by hæmoptysis, expectoration of purulent matter, aphonia, and hectic fever, was sitting in a house of palm-leaves playing on a guitar, when he heard a loud noise and felt a hard blow on the back part of his left arm, causing him to fall to the ground, losing his power of motion, but not his consciousness. At the same moment he observed a small bluish-white globe of fire advancing toward him, which entered the sleeve of his right arm, ascended to the shoulder, crossed over the neck to the left shoulder, and then ran down his left side to his hips, pubis, and genital organs, and left his thigh for the house, and melted the metals and destroyed the furniture. The patient observed thirteen large burns upon his body; his testicles had disappeared, and his penis had become reduced to a very small size. The burns had cicatrized in three months, and in proportion as the weakened state of the system was ameliorated did the pulmonary symytoms disappear. At the end of six months he had entirely recovered; his voice had become very soft and fine; his beard was falling out, and he presented all the external appearances of a eunuch. The cure is ascribed to "the revulsive effect produced by the extensive burns, or, perhaps, to some particular virtue possessed by electricity." Should our Cuban brethren believe such to be the case, we would advise them to attach their consumptive patients to a lightning rod during a thunder-storm, so that they may the better obtain the "particular virtue" of electricity.

THE COLLEGE OF SPIRITS IN PARIS.—We learn, from the *New York Tribune*, that Mr. D. D. Hume, the celebrated Spiritualist, is about marrying the sister-in-law of a Russian noble, and intends establishing a spiritual college in Paris. The particulars of the humbug we extract from the *Tribune*.

"Hume will return to Paris with his wife and the dowry, and they say that after the examples of Mesmer and Cagliostro, he is going to found at Paris a grand establishment of supernatural communications, a sort of Spiritualistic Exchange.

"To this establishment there will be joined a school of *Fluidism*, where the rich will be initiated in that great mystery—requiring a sacrifice proportioned to their wealth. This school will be divided into three classes. The first will be a sort of gymnasium, purely mechanical, where will be shown the method of disengaging the fluid by exercises at once physical and intellectual. Everybody possesses the spiritual fluid, and if some appear to be without it, it is because they do not know how to produce its disengagement. Hume said as much to us not long ago; and to make himself understood, he added the following explanation:—

"'Here is a cake of resin. This cake contains a great quantity of electricity. But this electricity does not manifest itself; it produces no phenomena; it sleeps. To awaken it I take this catskin and strike the cake of resin, and the electricity manifests its presence in a lively manner.'

"The first class of the school of fluids will be that in which they will operate on the natures possessing latent fluid, as they operate upon the resin with the catskin; accordingly, we call this the catskin class.

"In the second class, the fluid being developed, awakened, and active, they will show how to direct it by faith and by will. It is not sufficient to have the fluid, it must also be known how to use it.

"The mode of using it is, then, what they will teach in the second class. In leaving this class, the adepts will know how to turn tables, to summon spirits, to question them, to receive answers; and, in fact, to place themselves in communication with the other world. This is the class of Reception.

"But, when this is known, all is not done. This is only to be in communication with the spiritual world; it remains yet to learn how to profit by these communications. They must not be regarded as useless play; as a series of curious but unfruitful experiments. We must learn all that the spirits know more than we do; we must use them to elevate ourselves, to make us better, richer, and more powerful.

"That is what will be learned in the third class.

"Well-informed persons pretend that, before returning to Paris, Hume will pass through Holstein, where he will visit, in the cave whither he has retired, the celebrated Count of Saint Germain, from whom he expects to obtain (for the spirits have promised it him) twenty-seven of the fourteen thousand seven hundred secrets which the immortal Count carries in his bosom.

"These twenty-seven secrets — the most important of the ancient Egyptian Cabala, and which are to restore to us the mysteries of Isis and Anubis — these twenty-seven secrets, together with the four that Hume already knows, are to form a total of superhuman knowledge which will make the happy initiated equal in power, beauty, longevity, health, happiness, and knowledge, with the inhabitants of the planets of the third order. The earth, it is well known, is only a poor planet of the forty-fourth order.

"The third class will be called the class of Results.

"We are informed that while Mr. Hume will open his school of Fluidism for men, and will make the living talk with the dead, Madame Hume, on her side, will direct a similar school for females.

"The number of pupils can never exceed sixty on the part of the males, and sixty on the part of the females. Each class will be composed of thirty persons.

"It is pretended that a company, composed of some very wealthy Russians and some Frenchmen, is formed for the establishment of these institutions, and that they are now negotiating for the purchase of the lands of the Hotel d'Osmont, in Paris.

"When these two schools are finally opened, Paris will be really the capital of the world. The plans are already in preparation. Two temples are spoken of, of the Egyptian order, connected by a gallery, in the centre of which, beneath a circular pavilion, surmounted by a cupola, will be placed a large circular table, around which eighty-two persons of both sexes, in alternate order, can be seated. These eighty-two persons will be Mr. and Madame Hume, forty male pupils and forty female pupils. The scholars of the first class cannot assist in turning the sacred table.

"The table being set in motion, the spirits evoked, and the mysteries prepared, the twenty men and the twenty women of the second class will retire, and it is only for the initiated of the third class that the miracles will take place, and the eyes of the mind be opened."

MONUMENTS TO JENNER.—It is a notable fact, that in London, where the charms of a pretty face are so much appreciated, especially among aristocratic circles, that even there Jenner's name has been but seldom mentioned since his decease, thirty-five years ago. It has not been so in some other lands, for, in the year 1821, a handsome monument to Dr. Jenner stood in the great square of Guatemala, a magnificent city in Central America. It is the capital of the State of that name, and has, or had at the above date, a population of 50,000 souls. The city stands about 8000 feet above the Pacific Ocean, on the western slope of the Andes, and contains an ancient and distinguished university. There the name of Jenner was honored and revered, even during his lifetime, as a benefactor to his species, and more worthy of a niche in our esteem than many of those who have been lauded as the conquerors and destroyers of mankind.—*Glasgow Herald.*—*Lancet*, June 5, 1858.

TO CORRESPONDENTS.—Communications have been received from the following gentlemen, and will be noticed in due time:—Drs. Hamilton, Dunglison, Klugé, Kerr, Sim, Starley, Packard, Spilman, Todd, McClellan, Lopez, Hachenberg, Fischer, and Wright.

NOTICE TO FOREIGN MEDICAL JOURNALS.—The *Dublin Medical Press*, *Gazette Médicale*, the July number of the *Glasgow Medical Journal*, the *Medical Times and Gazette* for July 3d, the second number of the *Journal de la Physiologie de l'Homme et des Animaux*, and Beale's *Archives of Medicine* have not reached us.

NECROLOGICAL NOTICES.

THE LATE SIR PHILIP CRAMPTON, M.D., Bart, F.R.S. — The *Medical Times and Gazette* brings us the news of the death of this eminent man, on the 10th of June, 1858, at the advanced age of eighty-one. He entered the army when very young, and at twenty-one was appointed Surgeon to the Meath Hospital, a position which he held for nearly sixty years. Two years later he took the degree of M.D. at the University of Glasgow, and soon published "An Essay on Entropion, or Inversion of the Eyelids," being at the time Assistant Surgeon to the Westmoreland Lock Hospital. Mr. Crampton was the first, in connection with Peter Harkan, to form a private school of Anatomy and Surgery in Dublin; the former taking the department of Surgery. His practice, from this time, rapidly increased, and he soon gave up private instruction. He was the discoverer of the muscle in the eye of birds, by which changes in its refractive power is produced, and to which Kölliker has given the name of "Musculus Cramptonianus." For this, Mr. Crampton was created a Fellow of the Royal Society, and about the same time was appointed Surgeon-General to the Forces. In the reign of George IV. he received the appointment of Surgeon-in-Ordinary to the King of Ireland, and in 1839 he was honored by the present Regent with the dignity of a Baronet of the United Kingdom. He was president of several, and a member of many learned societies. Medical periodical literature owes much to his pen, and his contributions may be found, principally, in the *Medico-Chirurgical Transactions*, the *Dublin Hospital Reports*, and the *Dublin Journal of Medical Science*. Mr. Crampton was devoted to his profession, in which he held the first rank; and his genius, talents, and scientific attainments were only equaled by his kind and affectionate disposition, which made him universally beloved.

DEATH OF DR. JOHN SNOW.—"We announce," says the *Medical Times and Gazette*, "with great pain and grief the death of our distinguished and estimable brother, Dr. Snow. He was suddenly seized with paralysis on Thursday, 10th instant, and died on Wednesday, the 16th, at his residence, 18 Sackville Street, at 3 P.M. Drs. Murchison and Budd assiduously attended him to the last. Dr. Snow was only in his forty-sixth year, and both on public and private grounds his early loss will be very greatly regretted. His name was known to the profession chiefly in connection with chloroform, to which subject he had of late years devoted a great deal of attention, and next to Dr. Simpson he was more deservedly looked upon as the highest authority respecting the properties and administration of this agent. He had instituted at great labor a vast number of experiments for the purpose of ascertaining its effects on the lower animals, and the manner in which it might be given with the least amount of danger. His labors were fully appreciated by the profession, and for several years the leading surgeons in London constantly sought his co-operation. He was very successful in the administration of chloroform, and we believe that only one death happened in his hands from this agent. Dr. Snow's labors were not by any means confined to this subject; he is well known as having devoted great attention to the investigation of cholera, and his views regarding the propagation of the disease by drinking impure water are familiar to the profession. Dr. Snow was a man of high integrity and moral worth, possessing great abilities and untiring energy, with an unassuming disposition; and his loss will be deeply felt by many who appreciated his sterling character, and valued his friendship."—June 19, 1858.

PROFESSOR BUSCH.—In our last issue we announced the death of the distinguished anatomist and physiologist, Prof. Müller, and we have now to record the decease of Deitrich Wilhelm Heinrich Busch, Professor of Midwifery in the University of Berlin, which has thus, in the space of a few months, lost two of its most renowned professors. He was apparently recovering from an attack of acute rheumatism, when cardiac disease supervened, and he died suddenly in the seventieth year of his age. He was the author of several works in his particular branch, which were well appreciated by his readers. Early in life he entered the army, and was, in 1814, made Professor of Surgery at Marburg. He soon gave up this branch for that of Midwifery, and was appointed, in 1827, to the chair which he so ably filled up to the day of his death.

Bi-Monthly Bibliographical Record.

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Analytical and Critical Reviews.

Art. I.—*De la Prostitution dans la Ville de Paris*, etc. Par A. J. B. Parent-Duchatelet. Troisième Edition. Deux Tomes. *Completée par des Documents Nouveaux et des Notes.* Par A. Trebuchet et Poirat Duval. *Suivie d'un Precis Hygiènique, Statistique et Administratif, sur la Prostitution dans les Principales Villes de l'Europe.* Avec Cartes et Tableux. Paris: 1857, pp. 732 et 892. 8vo.

Prostitution in the City of Paris, etc. By A. J. B. Parent-Duchatelet. Third Edition. Vols. Two. *With the Addition of New Documents and of Notes.* By A. Trebuchet and Poirat Duval. *Followed by a Hygienic, Statistical and Administrative Notice of Prostitution in the Chief Cities of Europe.* With Charts and Tables.

Prostitution, considered in its Moral, Social and Sanitary Aspects, in London and other Large Cities, with Proposals for the Mitigation and Prevention of its Attendant Evils. By William Acton, M.R.C.S. Formerly Interne of the Venereal Hospital in Paris, late Surgeon to the Islington Dispensary, Fellow of the Royal Medical Society, etc. London: 1857, pp. 189. 8vo.

The Greatest of our Social Evils: Prostitution as it now exists in London, Liverpool, Manchester, Glasgow, Edinburgh and Dublin; an Enquiry into the Cause and Means of Reformation. Based on Statistical Documents. By a Physician. London: 1857, pp. 344. 18mo.

De la Prostitution et de ses Consequences dans les grandes Villes, dans la Ville de Lyon en particulier; de son Influence sur la Santé, le Bien-Etre, les Habitudes de Travail de la Population, des Moyens d'y Remedier. Par A. POTTON, D.M., etc. Paris et Lyon: 1842, pp. 289.

Prostitution and its Consequences in Great Cities, and particularly in the City of Lyons; its Influence on the Health, Well-being, Habits of Labor of the People; the Means of Remedying it. By A. POTTON, M.D. Paris and Lyons: pp. 289.

SOME social evils press more heavily on one people than another; some seem to belong to particular periods in the history of a nation. Prostitution enjoys the bad eminence of being an evil and a crime, which has been continued from the earliest times down to the present day, in every country under the sun, in every stage of society, and among people of all religions—Pagan, Jewish, Christian, and Mohammedan. No angry sectarian can taunt the members of another sect with toleration of this evil, and claim for his own an exemption from its presence and effects. If there be an exception it is among the Quakers or Friends. Prostitution is denounced in strong terms by all religious bodies; but no one of them has come forward with any practicable or working plan for its prevention, or even systematically and earnestly set about lessening its frequency and mitigating its deleterious operation. Partial efforts have been made in this sense by benevolent and religious individuals; sometimes personally, more generally by the instrumentality of a Society; but with small, though, let us gratefully acknowledge, some beneficial results, as far as they went. The urgent necessity for reformatory efforts must be felt by those who have given any attention to the subject, whether it be studied in itself or in its indirect effects and collateral bearings. Prostitution, as degrading the human being below the brute creature, since it has not the excuse of animal appetite in those who follow it as a trade, is an enormous evil, which must be abhorent to the pure minded, as it ought to be revolting to the right sense of every reasonable being. But this vice stands not alone in its debasing character: by its spread it evokes or unites with other forms of evil, either as instigator or abettor. To prostitution are soon added lying, deceit, fraud, theft, drunkenness, and violence, which does not always stop short of murder. The physical ills keep pace with the moral ones; and we find a break down of health, incident to an irregular life and exposures to atmospherical vicissitudes, and which shows itself in various diseases. Foremost, by its frequency and destructive action on the organism, is syphilis, of which prostitution is the unceasing distributer in every direction through the community.

At the first view of the subject, it would seem as if retributive justice showed itself in the penalty for illicit intercourse between the sexes, by the disease in question; but alas! the innocent are made to suffer also, and the poison is brought from the brothel to the nuptial chamber, and contaminates the unsuspecting and virtuous wife, and through her the offspring. In a more insidious manner the mischief is effected by a man, who, after his constitution has been ruined by venereal excesses and disease, enters the married state, and becomes the father of children whose inheritance is decay and corruption of the springs of life.

The prevalence of the disease among the different classes of society may be inferred from the fact that nearly one-half of the surgical out-door patients of the London hospitals seek relief there for venereal affections, of which number about one-half are women and children. "One hospital alone, St. Bartholomew's, registered nearly 15,000 such cases on its books during one year."*

If the question be asked, how so deeply-rooted and wide-spread, and so virulent a moral pestilence as prostitution can be prevented, or even mitigated in its destructive operation, the reply can hardly be made in direct terms, or by a brief statement of means, unaccompanied by postulates and explanations demanded by the complexity of the problem offered for solution. Shall we reply in negatives, and say that the question cannot be satisfactorily met; but must be passed over in entire silence as a thing too gross and impure to be approached, or, if noticed at all, it can only be in terms of angry and general denunciation at the enormity of the vice, and the sinfulness of those who indulge in it? It may not occur to the mind of the stately matron, who has lived from childhood surrounded by all the aids to a virtuous life, derived from good example and associations, and religious instruction, and who would shun the very mention of the subject as carrying with it a taint, that the poor wretches whom she would treat as Pariahs, as outcasts, degenerated beyond redemption, and foul to loathing, may, some of them, have been seduced from the paths of innocence, and made what they are by the devilish arts and the lusts of a husband, a brother, or a son. Is she sure that the persons who are so dear to her may not habitually indulge in the mercenary caresses of these nameless and abhorred creatures? Were this estimable lady to be made aware, or had she even a suspicion of such transactions, antecedent or present, she would probably lend a pitying ear, if not at once to the voices of the frail ones, yet certainly to the narratives by others, of their wrongs and their misfortunes, and admit that their situation ought to be inquired into, and means devised for at least ameliorating it.

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* Brit. and For. Chirurg. Rev., April, 1858.

We put the case thus strongly as an answer to the mawkish delicacy of some and the pharisaical righteousness of others,—the numbers of both of which classes are, we cannot but believe, diminishing in numbers as well as in influence. But a more cogent argument for benevolent and judicious investigation, with a view to abatement of the evil and reform of the evil-doers, than any based on selfish considerations, is found in the clearly expressed precepts of Christianity, and the benevolent example of its divine head and teacher. Wherever these influences are acknowledged, there must men, and women too, be found ready to aid in extricating from the trammels of vice a much-wronged, as well as wrong-doing portion of their fellow-beings. While performing these kind offices, they will at the same time find themselves engaged in co-relative efforts for preventing the extension, through the various ramifications of society, of a series of both moral and physical contagion which, without such checks, would corrupt to the very centre.

In France, and in Paris too, which is the epitome of all that is French, where every phase of society and every social problem is investigated and discussed with a breadth of illustration and a freedom of language which sometimes surprise the more cautious and reserved Anglo-Saxons,—English and American,—Parent-Duchatelet, the author of the first of the works which we propose to introduce to the notice of our readers, thought some explanation necessary for his selection of such a subject. The answer of this benevolent physician, who devoted so many years of his life to sanitary investigations, in disregard of his own health, and eventually at the sacrifice of his life, to his censors and advisers, was short and conclusive. It should be known, for the better understanding of his references to antecedent labors, that he had traversed every leading sewer of Paris, and spent hours at a time in them, in order to ascertain the better any faults of construction, and the means of rectifying them.

"If I could, without shocking any person's feelings," writes Duchatelet, "enter the public sewers of every kind, and come in contact with putrescent substances, pass a part of my time in the receptacles for all kinds of exuviæ and filth, and live, in a measure, in the midst of all that a collection of human beings exhibits of the most abject and disgusting nature, why should I be ashamed to approach a sewer of another kind, (a sewer more filthy, I admit, than all the rest,) in the hopes of doing some good, by examining it under all its aspects? By devoting myself to investigations on prostitutes, shall I then be necessarily corrupted by contact with those unfortunate beings?" The sentence which follows may help to undeceive those who are in the habit of associating with the French character, and especially with that of French women, ideas of levity, frivolity, love of exhibition and of personal adornment: "And if," continues Duchatelet, "venerable ladies, who by birth and social standing belong to all that is most elevated among us, do not believe that they are lowering themselves by coming from time to time into the midst of prostitutes, for the purpose of enlightening and instructing them, when they are in prison, or in infirmaries, what have I, a mere individual, to fear in imitating them, and endeavoring to reach the same end, even though I should pursue a path somewhat different from theirs?"

Duchatelet persevered in his researches for a period of no less than eight years, and he has recorded the results in a work unique at the time of its appearance, and which not merely silenced all objections to the wisdom of his course, but has contributed more than anything that had been previously written to the better understanding of a great social evil, and to incite others to pursue the same path of inquiry. From the joint labors of the benevolent and indefatigable Frenchman, and those of medical and other writers elsewhere throughout Europe, there has resulted a full and methodized knowledge of the subject, which was absolutely necessary for the enlightening of those who might engage in the task of reformation, whether this were to be attempted by governments, by associations, or by individuals.

The subject of prostitution comes specially under the notice of the medical observer in its relations to public hygiene, and to pathology. Under another point of view, that of morals, he enjoys not only the common right, but he feels that he is enjoined, as if it were a part of his ethical code, to study it with care and to note the connection, in this as indeed in every other situation in life in which a human being is placed, of morals with hygiene. It is impossible to enter fully into a consideration of the one without continued attention to the other.

In the impossibility of doing common justice, in a single article, to a subject of such diversified aspects, and which deals so much in minuteness of description and multiplicity of details as the one now before us, we must content ourselves with pointing out some of the chief land-marks in this wide field, and trust to the chances, hereafter, of opportunity for further survey.

Prostitutes in Paris have been described by their historian with a detail and an impartiality with which a writer might be supposed to describe a new tribe of people coming from a far country and settled in the French capital. We read of the distant origin of many of them, the circumstances which induced them to leave their homes, their conduct in their new dwelling-place, their struggles to make a livelihood, the crimes added to the original trade, itself criminal, into which they were led,—their physiology, traits of disposition and character, social state, as measured by the society of which they are outcasts, and as displayed in the divisions among themselves, from the kept mistress, playing the part of a fine lady, down, through intermediate degrees of degradation, to the half-clad, frequently drunken and loathsome creatures, who hang around barracks for troops, and the vilest drinking-shops to which the refuse of the people resort, and who fall far below the nearly naked harlots of Central Africa, as described by Barth in his Travels. The historian follows the prostitutes into the prison and the infirmary, in both of which they are frequent inmates; he tells of their registration—certificates of their own infamy; their lodgings; restrictions imposed on them, and the sanitary precautions adopted for their benefit, and which serve, at the same time, to prevent their spreading syphilis among their customers,—for so one may term those individuals of the other sex who buy the temporary use of their persons.

The prostitutes of Paris may be fairly regarded as representatives of the type which is seen in all civilized communities; and hence, with some modifications, growing out of nationality and police restrictions, we may accept Parent-Duchatelet's* history of Prostitution in the City of Paris as an exposition of its leading features in the other cities of Europe and America.

The first question commonly asked, and which seldom obtains a satisfactory answer, when researches are made with a view to solve it, is, the *number of prostitutes* in any given place. On this point there is a general tendency to exaggerate even by those who, from their holding semi-official stations, might be supposed to be well informed respecting it. The editors of the great work of Duchatelet exhibit a tabular view of the number of registered prostitutes, or women of the town, in Paris, in 1854, which is set down at 4232, in a city containing a population of about a million and a half of inhabitants. It is impossible to form a correct estimate of the number of those whom our author calls clandestine prostitutes, and who, although engaged partially in some legitimate calling, make, nevertheless, a trade of their persons. These are variously estimated at 20,000, 40,000, 50,000, and even 60,000.

The question which follows that on the number of prostitutes in Duchatelet's work is,—*What countries supply Paris with this class of persons*, and in what proportion? Of the 12,707 women inscribed in Paris from 1816 to 1831, or during a period of fifteen years, thirty-one came from the three continents external to Europe, and 451 from countries in this last, other than France. We shall not enumerate these, but repeat the observation made by the author, that the majority of the 451 females were supplied by the capitals of the different states. The regularity of the yearly arrival of these strangers in Paris merits notice. The same proportionate number, as we learn from the editors of the work, MM. Trebuchet and Poirat Duval, was recorded during the ten years between 1845 and 1854, and distributed very much in the same geographical ratio. When the inquiry is directed to the proportions contributed by the different provinces of France, the number collectively being 12,201, in a period of fifteen years, great inequality is observed in this respect. Omitting tabular details we reach the conclusion drawn by the author, and corroborated by his editors, that the nearer the several departments, in which France is divided, are to Paris, the greater is the number of prostitutes, or of those ready to become such by inclination or to gratify the vanity of dress, who resort to Paris.

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* The family name of the author is Parent; the addition of *Duchatelet* being derived from a country house called *le Chatelet*, to which his parents retired when he was two years of age. He died in Paris in 1836, aged forty-five years.

The *social standing of the families*, some of the members of which contribute to the list of prostitutes in Paris, is the next point for examination by Duchatelet. The difficulties which stood in the way of his procuring the required data for forming a correct opinion in the matter, were overcome by his inducing the Minister to insist that all those who inscribed their names should bring an authenticated certificate of birth. As relates to the prostitutes born in Paris, it appears that a large majority of them were daughters of artisans; and that a similarly large proportion of those from the provinces were from the laboring class and those of stinted means. Parents thus situated are unable to attend to the education of their children, or to watch over them, and still less to provide for their wants when they have reached a certain age. Families in these circumstances supply house-servants and factory-girls.

From this point, by easy transition, the author passes to an inquiry into *the degree of instruction possessed by the fathers*, he does not say the parents, of prostitutes, as well as of the witnesses to the certificate of birth. Of 718 certificates of birth, of registered prostitutes, there were 545 signatures by the fathers, and 173 in which there was no such signature, owing to the inability of this number to write. Hence we see that one-third of the fathers of these girls were unable even to sign their names, and this in Paris, where primary instruction is accessible to everybody, and where it is deemed to be of the first necessity. In the departments, the ignorance of the fathers was still greater than in the capital. The inferences from these facts are seen at once, without commentary or argument: they point to the dangers, in a moral point of view, growing out of poverty and ignorance, as well as to the drawbacks to material comfort and prosperity from the same causes. Duchatelet says nothing about the religious instruction of prostitutes in early life, nor to what extent a want of its restraining influence contributed to hurry these unfortunates into their criminal career.

The *ignorance of the females themselves* corresponds with that of their parents. Of 4470 who were born and brought up in Paris, 2332 were unable to sign their names, 1780 signed, but in an imperfect manner, 140 wrote their names well, and some of them very well. No returns were made of 248 persons of the preceding total. We find, then, says Duchatelet, that in the capital of France, in which instruction has always been generally diffused, and is imparted gratuitously to those in indigent circumstances, and in which its importance is felt by the people, because it is necessary for obtaining a livelihood, there is but one girl with an indifferent degree of instruction for 2.3* who are entirely without it. Shall we say that these miserable beings were wanting in capacity, or that their parents were utterly indifferent to the subject? If this latter, do we not find a proof of the moral degradation and neglect in which parents allowed their children to remain; subjecting themselves to be reproached by these unfortunates for all the excesses into which they have been plunged? In the prostitutes supplied by the departments the proportion of those entirely ignorant was not so great as among the Parisians. On this point there is a want of agreement with what had just before been said of the greater ignorance of the fathers out of the capital.

A list is given of the different *occupations* of the women, numbering 3120, at the time of their entering the ranks of prostitution. A long one, embracing forty-one separate heads, is also furnished by the editors. It is largely made up of females who had been engaged in the various trades and occupations in which the needle is used: it includes of course seamstresses so-called, mantua-makers, milliners, embroiderers, shoebinders, makers of artificial flowers, etc. To these must be added laundresses, crimpers, etc. The majority, however, or eighty-seven in 1000 prostitutes, had no regular calling at the time of their inscription. House-servants furnished eighty-one in 1000. Next come depilators, so far as consists in the extracting of gray hairs. Of the entire number noticed by Duchatelet, there were three midwives; seven women who had kept shop and were doing a good business; one was a good landscape-painter; six were musicians and gave lessons on the piano; sixteen had been actresses or figurantes in the theatres of Paris and of the departments. Finally, and as a rare exception to the general rule, three had, respectively, a yearly income of 40, 100, and even 200 dollars. The author acknowledges his inability to explain the motives which prompted these women to register their names in the general list of prostitutes.

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* If the terms of the proposition were to determine the ratio of the ignorant to the whole number of prostitutes born in Paris, omitting the 248 of whom no record was made on this point, the answer would be one to 2.7, or nearly as three to seven.

The tables of the *ages* of the females who were inscribed as prostitutes in Paris show that some of them were only twelve years old, and others but ten and eleven years—a fact which, of itself, speaks most feelingly of the horrors of the vice of prostitution, when mere children are found to ply their trade in it. From sixteen to twenty two years of age there is a gradual increase in numbers. At this last date the culminating point is reached, and the number declines every year, with some irregularities, from nearly seventy-seven (76.97) in 1000, at twenty-two years of age, to thirty in 1000, at sixty-five years of age. At the present time minors, or those under the age of fifteen years, are not received as subjects for inscription, and, if found leading a life of prostitution, they are at once arrested and sent home to their families.

The *first causes* of prostitution are, Duchatelet thinks, very varied; not being the same in the case of women of the cities and those of the country, nor among those from the provinces in general and those originally Parisian. He indicates the chief causes, as far as he could learn from the parties themselves, and as the result of other inquiries. He regards it as an undoubted fact, that all those women who give themselves up to public prostitution had previously led a disorderly life of longer or shorter duration. In the space of ten years, not more than three or four girls were seen at the Dispensary with the intention of having themselves inscribed, who had not lost their virginity. That there should be a single one in this situation, willing to pursue the vile trade without the excuse of previous betrayal, affords matter for melancholy reflection. Ought we not, however, to regard the disorderly life, which implies a loss of chastity, as a secondary rather than a primary cause of prostitution? It is the first step in the downward career, the causes of which, called secondary or individual by the author, we shall now specify. Foremost among these he places idleness, which brings with it the desire to procure pleasures without work. The idleness, recklessness, and want of energy of prostitutes, have become almost proverbial. Poverty, often carried to the most frightful extent, is likewise one of the most efficient causes of prostitution. How many young women, abandoned by their family, without relations and without friends, and unable to find refuge anywhere, are obliged to have recourse to prostitution in order to prevent them from dying of hunger? One of these unfortunates struggled to the very last extremity before she took such a step; and it was shown, when she had herself inscribed, that she had not tasted food for three days previously. Instances of this nature occur in every large city, and their number and character, as we shall show hereafter, if opportunity be allowed us, is frightfully great in London. Vanity and the desire to shine in rich attire are, together with idleness, the most fruitful causes of prostitution. The editors of the work before us do not hesitate to declare that these are traceable, generally speaking, to coquetry and an inordinate desire for luxurious indulgences.

We may say, in fine, that the love of dress and show exerts a much more seductive influence than any love that may be felt for the person who is regarded as the seducer, but who, in such cases, may accomplish his purposes without making vows of love and constancy. All that he has to do is to minister to the vanity and fondness for personal show of the silly girl. In fact, the intercourse between the parties becomes, without their avowal or even consciousness, an affair of trade, more prolonged and varied in its course than in the case of common prostitution, but it is essentially of the same character. The girl, hitherto innocent, sells herself for dress, but without specification of cost or terms, the very mention of which would shock her; the prostitute, more bold and frank, sells herself at a specified, and it might be called, a market price. The former of the two may obtain credit for a selection of her mate, a show of sentiment on the occasion, and even imaginary love, but her constant passion for personal adornment makes her accessible to any professed admirer who will gratify it. When a woman perpetually lays herself open to the seduction, whether it be of passion, of money, or of dress, the seducer, or rather the *particeps criminis*, is not long in presenting himself.

This is one of the causes of prostitution which ought to be pressed home to the mind and conscience of the young, and made to enter into the convictions of mothers, who so often encourage the love of dress in their daughters, and indulge in littleness of every kind to procure means for its gratification. Associated very generally with the love of dress is the love of amusements, and these, too often, of the most frivolous nature; and he, who, outside of the nearest ties of consanguinity, is allowed to minister to these loves, with the consent of the mother, or of the parents jointly, may be said to have, already, a mortgage on the person, if not a share in the affections of the daughter. The responsibility for the evil consequences which are too apt to ensue, must be divided in such cases. The man, on his side, does not often begin his intercourse with corrupt motives: he takes pleasure himself in the amusements to which he is the escort; he is gratified with being the companion of a young and pretty, or sprightly girl; he is sometimes the flattered as well as the flatterer; and, up to a certain point of time, which is determined by unexpected and unsought-for opportunity, following it may be the excitement of the giddy dance, or of theatrical exhibition, or still more of hot blood, wildly hurried in its round by intoxicating liquor, he had no thought, certainly no determinate thought, of the life-injury which, in a moment of forgetfulness and passion, he inflicts on his companion. If her subsequent fate be pitiable, his conduct is not always without palliating circumstances. We are telling now unpleasant truths; and we do so with a view of recommending habitual caution and forethought, and also of creating alarm in the minds of all parties at the very idea of a young and inexperienced girl being exposed to temptation in her taking a single step in a wrong or a doubtful direction.

The *fondness for personal display and of outshining their companions*, which so often leads to unchaste courses, and finally to prostitution, continues to display itself in an exaggerated style in those who have given themselves up to the trade. The editors of Duchatelet relate the case of a kept mistress who was allowed 600 dollars a month by her paramour; but this sum fell short of her wants, and, with a view of increasing her income, she went, from time to time, to a house of clandestine intercourse, or a house of assignation, where she was arrested. In reply to the observations made on her conduct, she said that she could not put down her carriage and do without her servants, and that she would prostitute herself to her coachman if he would engage to keep her horses.

The women of the provinces are exposed to a particular cause of prostitution which those of Paris escape. It is *desertion by their lovers*. A large number of young men,—officers of the army, students, and commercial travelers, seduce young girls in the provinces, contract a *liaison* with them, and by lying promises of marriage, or of forming an establishment for them, or through the necessity the girls are under of concealing their shame, carry them to Paris, where they are soon abandoned, and the poor creatures are left to work their own way. We may imagine their situation —entire strangers, left in a furnished lodging, sometimes in the street, and without money, in a city like Paris, and, to complete their misfortunes, not daring to show themselves in their natal spot, where their misconduct is known, nor to return to their families, which they have disgraced, and whose anger, and even hatred, they have incurred. Can one be surprised that a young woman, thus situated, should lend a willing ear to the suggestions and promises of those whom she meets? It is well known that on this class of girls do these detestable women, whose trade consists in corrupting and perverting the minds of youth, more particularly fix their eye, and track them everywhere; exhibiting in this infernal business a remarkable degree of address.

Some girls are compelled to leave their homes, owing to domestic troubles and the bad treatment which they have received from their inhuman parents. Sometimes they tell that they were driven to this course by the brutality of a stepfather or of a stepmother. Many, it would appear, are chased from under the parental roof, probably owing to their own misconduct, for there are parents thus barbarous, although we are bound to believe that the number is small. A long stay in a hospital, or in poorly furnished lodgings, to which servants out of place go, is often the immediate cause of the criminal course of many women—not so much from their being thrown into corrupt company as from being exposed to the machinations of those detestable procuresses already alluded to. These wretches employ agents who keep them apprised of everything that passes, and send them nôtices of all the girls who may suit their vile purposes. Many are not aware that there is a more wicked trade in living bodies, and in living souls too, than the African slave-trade itself. The misconduct of parents, and the bad example in every way which they set before their children, should be regarded as a determining cause of prostitution. The papers of such girls and the minutes of the interrogatories made to them, reveal, continually, domestic disorders; widowed fathers living in a state of concubinage; widowed mothers, and even married mothers, having lovers; their fathers and mothers separated, etc.

Thus privations, apathy, and the necessitous condition of many of the people of the lower classes foster, certainly do not guard against, and are powerless to prevent the corruption of their children. It may be said of a goodly number of prostitutes, what observation has shown to be true of malefactors—that they are for the most part of low origin. Confining our notices to young girls, what ideas of virtue can they have, when from their early years no attention is given to what they either hear or see, and when they find their parents (if indeed they be not natural children) separated from each other, and contracting adulterous relations? "Compelled, for the most part," says the author, "to take to the public streets at dawn, to sell fruit, vegetables or songs, or mixed up in the workshop with young persons of their own stamp, they soon acquire licentious habits, and form prematurely immoral connections (*liaisons;*) they have lost their innocence before nature has revealed herself. There *liaisons* cannot be durable, and the unfortunate creatures are already prostitutes in the midst of labor, and under the eyes of their parents. With such antecedents, is it to be wondered at that the sight of their comrades, already given to prostitution, that their idleness, always the companion of vice, and the reports which reach their ears, of the pleasures procured by debauch, because it allows them to gratify all their desires without recourse to labor; is it, I say, surprising that such a concourse of circumstances deprives a young girl of all power to resist seduction?"

Here is a picture largely suggestive to the minister of religion, the master manufacturer, the philanthropist, the political economist, and the statesman. It is one to be looked at not merely with an eye of sympathy, and expressions of pain and regret: it calls for action, at once systematic, practical and persistent. The author reverts to a fruitful cause of prostitution in Paris, and in all other large cities, viz.: "the want of employment and the destitution, which are inevitable results of inadequate wages. What," he asks, "do our mantua-makers, our seamstresses, and all those who are occupied in needle-work, earn?" If we compare the gains of even the most skillful with what can be done by those of moderate readiness in this line, we can see whether it is possible for the latter to procure the strict necessaries of life. Comparing especially the price of their labor with that of their dishonor, we shall cease to be surprised at seeing so great a number fall into a disorderly course, which would seem to be inevitable. The temptations from this cause, and the terrible suffering encountered by females, including daughters, and widowed mothers, and older sisters, before they yielded to them, are forcibly portrayed in the narratives of prostitution in London, of which, as representing, to a certain extent, a similar state of things in our own large cities, we shall say something more hereafter.

The lamentable picture of want, and of its effects on female character and conduct, receives some additional touches from the pen of the author in his notice of the encroachments by men on a large field of employment which it would be more just and honorable to leave to women. "Is it not shameful," he exclaims, "that we should see in Paris thousands of men, in the full vigor of their age, who lead, in coffee-houses, shops and stores, an easy and effeminate life, only suitable to women, and who are engaged in rubbing the dust off silver plate, or handling trinkets? The effects on them are ignorance, and, in a short time, enervation." The substitution of men for women in various kinds of business, although perhaps more common in Paris than in other places, is not by any means confined to that capital.

In looking at the great social evil of prostitution, Duchatelet very pertinently inquires, whether society has sufficiently occupied itself with the fate of those women who keep it up, and who, for themselves, claim its care, independently of the importance of the subject as a question for government action. Many ameliorations have yet to be made, but these cannot be attempted without an accurate knowledge of the evils and abuses which require correction, and the concerted efforts at reform by all the parties who have an interest, and to a certain extent, the ability in bringing it about. The fact would scarcely be credited, but it is, alas! too true, that the trade of prostitution has been taken up by some women as a means of enabling them to discharge the duties devolving on them as mothers or as daughters. "It is not," writes the author, "an uncommon thing to see married women, abandoned by or deprived of their husbands, and consequently left without any support, become prostitutes, with the sole design of saving a large family from starvation. It is still more common to find young women, who, not being able to provide for the wants of their aged and infirm parents, take up the trade of prostitution to eke out what is necessary."

The editors direct attention to a motive for prostitution which is more frequently operative than these just given. It is, to enable the mother to retain her child, for whose support her scant earnings are entirely inadequate, owing, in part, to the time taken up with her infantile charge. The following case, among others, will serve for illustration. A young girl, well brought up, lived with her mother, whom reverses of fortune had reduced to a state bordering on indigence. The mother, owing to excessive labor and prolonged vigils, became nearly blind. The daughter was seduced by the proprietor of the house in which she lived, and was afterwards abandoned by him. Unable to provide for the wants of her child and her mother, she went to the office and asked to be inscribed. As she was no longer a minor, her seducer could not be prosecuted for desertion; and representations made to him were without effect. The prefect of the police, M. Delessert, gave her some assistance out of his private purse, which retarded the catastrophe, but did not finally prevent it. This girl was not regarded with a favorable eye by others of the trade, with whom, be it said however, she would not associate. She contracted on different occasions many severe syphilitic affections; and on the death of her mother she disappeared, without its being known what became of her. In such a case as this we can form some idea of the dire necessity which drives a woman to prostitution, and forces her to continue it after having suffered again and again from a loathsome, painful, and disfiguring disease.

Some women, we are told by the author, give themselves up to prostitution in a spirit of utter licentiousness, which can only be explained by the supposition of their laboring under insanity.

Duchatelet introduces the question,—whether prostitution is owing to the *extreme degree of civilization* which is now reached? History and the observations of travelers give a decidedly negative answer, and the author justly remarks, that if our present social state be accessory to the loss of many women, this same state enables many to provide resources which they could not otherwise have had, and which allow of their preserving their honor, and of continuing in the path of virtue.

The causes of prostitution in 5183 cases are presented in a tabular form by Duchatelet: they indicate the proportions furnished by Paris and the departments, respectively, and specify, as regards the latter, the returns from the chief towns, the sub-prefectures, and the country. We shall not repeat these, but present the totals under the head of each of the separate causes. First in the list are poverty and extreme destitution, which number 1441; next, as far as relates to numbers, although it appears last in the table, is concubinage, by which kept women having lost their lovers, and not knowing what else to do, resorted to prostitution: they amount to 1425. The third, in the series of causes, is loss of parents, expulsion from the paternal home, complete abandonment, 1255; brought to Paris and abandoned by the persons already described in a preceding page, 404; servants seduced by their masters and then deserted, 289; those coming from the provinces to conceal themselves in Paris, and find means of living there, to support aged and infirm parents, 37; the eldest of the family, having neither father nor mother, with a view of providing for their brothers and sisters, sometimes their nephews and nieces, 29; widows destitute and abandoned, in order to bring up a numerous family, 23. Mention is made of some additional and revolting traits in this gloomy history, such as two sisters being inscribed together on the register of prostitutes; this occurred in 164 instances in the above grand total of 5183 individuals. In four cases there were three sisters, and in three cases, four sisters—in all 252 sisters. Besides these, there were sixteen instances of mother and daughter on the list; and twenty-two of cousins-german. The authorities have decreed that a mother and daughter cannot have their inscription together for the same house; so it is in the case of two sisters, if one of them be a minor. It should be stated that the entire number of the instances of close consanguinity between the 436 prostitutes, as above, must be spread over a period of seven or eight years.

The *manners and habits of prostitutes* are the subject of a highly interesting chapter in the work of Parent-Duchatelet. It is, indeed, as he justly remarks, one of the most important in the history of this class of human beings. How, he asks, in nearly the same terms which we have already made use of, when speaking of the causes of prostitution, can ameliorations be procured, reforms brought about—in a word, good done, without a knowledge of the tastes, manners, habits, and failings of the class whom we are studying? Curiosity will be felt to know what prostitutes think of themselves, and whether they are those hardened, reckless and shameless beings whom their deportment and speech, when seen abroad or spoken to casually, would seem to indicate. Studied at other times, as when they are in prison and suffering, and particularly when, by proper measures, their confidence is obtained, we can discover what passes in their minds, and how oppressively they feel the weight of their infamy. We are authorized in saying, that they know their course to be an evil one, and that they are justly despised; and hence they never feel at ease except when they are in each other's company and with other depraved persons. The sight of mothers of families and of virtuous women is hateful to them, and they take pleasure in insulting such persons, in revenge, as it were, for the contempt with which they are themselves visited. Although, in the exercise of their trade, they affect a bold and forward air, many of them, under other circumstances, take great pains to conceal their true character, and dress themselves with remarkable simplicity. In their visits to the Dispensary they do their best to escape notice, and they may be said to glide in and out. Some of them coming from the provinces will choose very retired quarters for their residence, so as not to be seen by those from their own part of the country. In general, there is nothing that they dread so much as meeting those whom they had known before their lapse into sin. The author has seen patients in the hospital who became ill from strong emotion produced in this way. Much, in such cases, must depend on temperament and the degree of intelligence of the parties. We have ourselves known an instance of utter insensibility in a prostitute on her adverting to the very first step in her undoing. A message was received to visit a person who was represented to be very ill at a designated house in this city. The physician thus sent for gave prompt attendance, and on his entering the sick room he found two young women, one of whom was in bed. The latter, who was the patient, began giggling the moment the door was opened, and continued to do so after the physician had taken his seat. On his expressing a desire to know the cause of her merriment, she replied, in a subdued voice, "You put me so much in mind of the person who seduced me." Whether the poor girl told the truth, or had been laughing with her companion at some joke before the doctor's arrival, could not be ascertained; but, in either of the two suppositions, we have proof of the indifference with which she could advert to what might be called the great event of her life. She was at the time suffering from syphilis, to be cured of which she had sent for a professional adviser.

But "prostitutes," to resume the remarks of Duchatelet, "not only are aware of, but have a profound conviction of their abject state, and are objects of horror to themselves; the contempt with which they regard themselves exceeds that with which they are regarded by the virtuous portion of society; they mourn over their fall, and form projects, and even make efforts, fruitless though they be, to change their condition; and what makes them despair is their knowledge that in the eyes of all the world they pass for the very scum and refuse of society." "One of them, in conversation with a physician of the Dispensary, told him, in an effusion of confidence, that she would not attach herself to one man in particular, because, whenever she embraced him she would believe that she was sullying him by her contact. One day, finding myself in a ward of the hospital without my being seen, I heard a girl exclaim, while she was admiring the beauty of the sky, 'How good is God to send us such fine weather. He treats us better than we deserve!' And the entire ward repeated, at the same moment, 'That is quite true.'"

The very thought of their fallen nature has driven many prostitutes into mental derangement. One of these was pointed out to the author by Pariset at the hospice of the Sulpetrière, (the asylum for insane women.) She said nothing in public; but when she believed herself to be alone, she repeated, without ceasing: "How unhappy I am for having forsaken virtue! How can I bear the general contempt! How live under this humiliation!" This feeling of their abjection and of the contempt which they inspire might be said to excite still more their pride and self-love, faults very noticeable in their character, and the wounding of which insures their perpetual enmity. But, when spoken to with mildness, and in a manner evincing interest in them, and if hopes are held out that they may once more enter into society and regain their place in public good-will, their hearts palpitate with joy. Some incidents are related to show this peculiarity in the character of prostitutes. When the sick of their number were first sent to the *Hospital la Pitié*, there was no chapel on their side; and when it was erected they were excited to the greatest pitch of gladness. Not that they felt any religious sentiment on the occasion, but it showed that, to use the language of one of them, they were no longer regarded as dogs, and that the same was done for them as for other people. A physician completely won their confidence, and could make them do whatever he wished, and thus secured the most perfect order in the wards, simply by an act of minor politeness in slightly raising his hat on his first entrance. Another physician, who affected the greatest disdain for them, was not near so successful in securing discipline in his wards. To this feeling of pride is due the contempt which the different classes of prostitutes have for those below them in the scale, and the hatred with which the inferior classes regard those who eclipse them in grace and beauty. Some not over-cynical person may ask, whether this last trait is peculiar to the degraded of the sex, and whether, to use a geological phrase, it does not crop out on the surface among womankind generally?

The *religious sentiment* is entirely wanting in a large number of prostitutes, to such an extent, indeed, that some of them are ignorant of a Supreme Being. The most numerous examples of this nature are found among those who had been thrust into the career of vice by their parents, or left to themselves from early infancy, or who did not even know where they came from. In the exercise of their trade, and in their conversations with men whom they meet in their walks, they are not sparing of jokes and ridicule on religious matters, but when alone or in prison, it is not always so. In the streets, when free, they do not fail to cross themselves on the occasion of their meeting a funeral procession. In the infirmaries of the prison, in which they are often collected in large numbers, they do not refuse the services of religion in their last moments; and their companions all assent to the propriety of such a proceeding, and declare that, under the like circumstances, they would themselves do the same thing. They will not, either in the hospital or the prison, attend the chapel on compulsion, but if the doors of the chapel be open, and hymns and canticles are sung in a language which they can understand, they will crowd in and comport themselves in the most irreproachable, one might almost say edifying, manner. A girl in the lowest of the class, who lost her child after a long sickness, used to offer up prayers regularly during the whole time. On the occasion of the death of a prostitute at her domicile, all her comrades subscribed to procure for her remains a grand funeral service, and to pay for a great number of masses. Another girl, of an inferior order in the class, having died, her comrades, clothed in white, accompanied the body to the church, and placed around it "a *prodigious number of wax candles.*" We repeat those incidents as part of the history of prostitution in a Catholic country, and without feeling ourselves called on, in this place, to criticise, in a Protestant spirit, the validity of certain ceremonies. In anticipation of the evidences of benevolent feelings entertained by these unfortunates, and which are adduced by Duchatelet, we shall introduce here an example taken from the other side of the channel, in London, because of its direct connection with what has been said above of the religious sentiments of the French prostitutes. The writer,* after quoting Duchatelet's account, relates the following:—

> "A very touching instance of these amicable feelings was related to us a short time ago. A poor girl, who, after a few years spent in infamy and wretchedness, was rapidly sinking into a decline, had still no means of livelihood but in the continued practice of her calling. But with a mixture of kindness and of conscience which may well surprise us under such circumstances, her companions in degradation resolved among themselves that, as they said, 'at least she should not be compelled to die in sin,' and contributed out of their own poor and sad earnings a sufficient sum to enable her to pass her few remaining weeks in comfort and repentance. This is not a trait of the wholly lost."

That, in their ignorance, prostitutes should have wrong notions of the purposes of prayer will excite no surprise. Some of them have had masses said to save their lovers from the conscription, or to bring back those who had abandoned them. The belief that Friday is an unlucky day is general among them; and hence there are fewer inscriptions and fewer visits to the Dispensary on those days. Every girl who is not satisfied with the state of her health, and who is afraid of being sent to the hospital if she be thought sick, will never arrange it so as to have herself visited on Friday. We are indebted to the editors of Duchatelet for the following additional particulars. The respect of prostitutes for the clergy is very great, and when, owing either to ignorance or the kind of house to which he is taken, or to the danger of removing the patient, the priest visits a "*maison de tolerance*," or permitted brothel, the girls in it manifest extreme gratitude, and even veneration. Although, for the sake of humoring the men with whom they consort, they may sometimes join in ridiculing or aspersing the priests, yet they rarely speak ill of them, or seek to affront them in the public street. If, by chance, a priest should, in ignorance, take lodging in a house inhabited by a prostitute, or the latter come to live in a house in which a priest resides, she will immediately cease to carry on illicit intercourse at the house, and will remove as soon as possible to another quarter without waiting for any formal intervention of the authorities. The remembrance of early religious instruction which some of the prostitutes may have recived is never effaced, and speaking to them of this instruction and of their first communion never fails to make them weep.

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* Westminster Review, July, 1850; article on Prostitution.

Do prostitutes, notwithstanding their vices and their habits in general, *retain any remnants of modesty?* is a question to the reply of which the author devotes a section of a chapter. He gives it in the affirmative, and sustains his belief by several incidents which are to the point. Of this nature are the reserve and guarded conduct which they display before respectable women, who are at the same time mothers. Very many of them blush when they are obliged to expose their persons before a number of people, and, by an instinctive movement, they close their eyes on such an occasion. Duchatelet tells of his having followed the clinical course of Michael Cullerier at the *Hospice for Venereal Diseases*, and of his not forgetting the profound impression produced on the prostitutes by an examination and demonstration of their diseases before a large assemblage of students. In every instance, without excepting even the most hardened among them, they blushed crimson ; they hid their faces, and regarded as a true punishment the trials to which they were thus subjected. A fact like this cannot but serve as a reply, we ought rather to say a rebuke, to those who quote French usages as an example, and assert that there is no harm in exposing the persons of female patients to a class of students in what are called Obstetric Clinics.

Parent-Duchatelet, writing in 1836, points out the great improvement during the preceding twenty years, and still more in the ten years which had just closed, in the deportment and manners of the prostitutes of Paris, even to the extent of bordering on modesty. Much of this change is due, he thinks, to the pains taken by the administration which exercises continual watchfulness and great perseverance in following out every plan of repression and reform. Prostitutes remain, in general, but a short time in their trade; going through it as a transition state, traditions are lost and easily forgotten by them.

The practice of *tattooing* is common with a certain number of prostitutes, and more especially with those who consort much with soldiers and sailors, whom they hope to please by imitating them in this particular. The skin is seldom marked or painted in this fashion on parts habitually exposed, but generally at the upper part of the arm over the deltoid muscle, under the mammæ, or on the chest. Almost always the tattooing consists in inscriptions, or in the proper names of individuals, followed by the words *pour la vie*, or the abbreviation P. L. V. Often these inscriptions are between two little flowers, or between two hearts, united by an arrow which runs through them. It may be worth while for those who study the odd exhibitions of human nature, to know that these names vary with the age of the woman. If she is young they are most commonly those of men; if she has reached a somewhat mature age they are generally those of women; and in the latter case they are invariably marked on the space between the pubes and the navel, which is never done in the case of the names of men. As the vow of constancy for life, implied in the inscription previously given, is soon exhausted, and as each new lover is complimented with a similar formula of devoted attachment, these women find it necessary to efface the old tattooing before the new is practised. This they contrive to do with great readiness by a simple chemical process which need not be given here. In one woman, not more than twenty-five years old, who was in the prison of the Madelonettes, no less than fifteen cicatrices, left by successive erasures and loss of cuticle and corion, could be counted. In one instance, the attempt to efface a name on the bend of the left arm cost the poor creature her life by an inflammation to which it gave rise. What merits notice is the absence of all impropriety or indecency of word or sentences in these inscriptions. The same may be said of the allegorical and other figures traced on the skin by a similar process. If exceptions were found to this reserve it was in girls of the very lowest order, who did it to please the gross tastes of the men with whom they associated. Even among this description of women these offensive maculations are now rarely met with.

A question of considerable moment presents itself as to the *manner in which prostitutes pass their time* when not in search of victims or purchasers, or otherwise engaged in their trade? As the author justly observes, there will be in this matter great differences, depending on class, and individual character and temperament. It may be said, however, that nine-tenths of them pass their time in entire idleness. Those of a higher order rise late, go to the bath, drink, eat, and romp, or throw themselves negligently on their bed or sofa: in summer they take promenades. Others spend their time in low wine-shops or taverns, drink and eat like the first-mentioned set, and hold conversation with vicious persons who frequent vicious places. Some of the better order work in embroidery or articles for the toilet, flowers, etc.; a few read, and a still smaller number have recourse to music. Some, in the second category, work at a trade or in factories, or sell articles in the street. This last occupation is generally preferred to any other. We should little anticipate the kind of reading to which they who pass any time in this way are most partial. It is a narrative of tragic scenes capable of exciting strong emotions. But, the most surprising feature is, that they have never been found with those licentious and obscene works which too many young persons are eager to peruse, as if they were under a necessity of taking lessons to prepare themselves for the trade of debauchery. All prostitutes, to whatever order they may belong, are fond of dancing, and in Paris they have regular balls near the barriers or in the adjoining villages. Paris, as the author remarks, is the place for contrasts. If the approach of evening be the signal for the greatest number of prostitutes to ply their trade, there are others who pursue it all day; and some even restrict themselves to a certain period of the day, after which they are no longer "at home;" and they pass the evenings in the company of their chosen lovers, or they go to the theatre, or to balls or concerts.

The *fictitious names* taken by prostitutes is the subject of a section in the work now under notice. Changes of name may be explained in many cases by some remains of shame, which would make them loth to be recognized by former neighbors and acquaintances; and also to avoid exposing their family. Another motive would be to conceal themselves from judicial pursuits for infractions of law, or from the surveillance of the police. For several years past, they are compelled, before being inscribed, to produce a certificate of birth, by which their real names are known. In the period between the years 1828, when this condition was made peremptory, and 1831, rectifications in the baptismal and surnames of these women were made to the number of 2271, or nearly one-half of all who were inscribed. The author gives a list of the *noms de guerres* which they assumed, or which had been given to them by their companions. The upper class show a great many names of a poetical or sentimental character, such as Armide, Calliope, Olympe, Flore, Malvine, Virginie, Delphine, etc.

The *filthy habits* of prostitutes, as evinced in their utter neglect of personal cleanliness, is one of their distinctive traits, a fact somewhat at variance with what might be supposed to be required by policy, as a means of increasing their attractions. The women of this class find a positive pleasure in dirt and filth; their only thought being of the external garments worn for show. When not, as it were, in a regular campaign, and no longer under public notice, they care not what tatters and rags they may have on; they exhibit no desire to receive clean linen; and it is only at the very last pinch that they will wash that which they have. This extreme of uncleanliness prevails most among the regular tenants of a recognized brothel, (*maison de tolerance*,) who, notwithstanding, rival in their toilet, as far as relates to show and elegance, whatever is most admired in general society. The intervention of the authorities has contributed greatly to diminish this neglect, both of decency and hygiene, and now, in many instances, it is replaced by ablutions which might be thought excessive, but which are particularly called for in prostitutes, both on account of their sex and their trade. After hearing of the filthy habits of these women we are prepared to learn that they are very subject to the itch, and that less than half a century ago their bodies were infested with vermin. Parasites on the head are still common in the young girls who are deemed the most stylish of their class.

Duchatelet denies that the prostitutes of Paris have a particular slang or jargon (*argot*) by which, like thieves and pickpockets, they can communicate with each other. They adopt certain expressions, but in small number, which are peculiar to them, and which they use when they are together. The case is different with those women who prostitute themselves to disguise their true calling, that of colluding with and aiding regular thieves, whose slang they adopt.

The peculiar failings of prostitutes, putting aside, of course, the vices inherent in their vile trade, are described by the author to be *gluttony, and fondness for wine and spirituous liquors.* Their gormandizing and voracity are extraordinary; some of them are continually eating, and consume enough for three or four women of their own age. They contract this habit from the disorderly characters with whom they make up parties to low eating houses, or even to those of a better stamp, according to the order to which they belong. The love of these women for spirituous liquors is general, although of course in different degrees; they acquire it very early, and with some of them it ends in the lowest degree of brutality.

All the investigations of Duchatelet prove that these women begin to drink for the purpose of deadening their sensibilities; gradually they get accustomed to it, and before long the habit becomes so fixed as to present a barrier to their return to virtue. In many cases it alone nullifies all the reformatory efforts of benevolent ladies.

This description of the progress of the habit of drinking, which leads to confirmed drunkenness among the prostitutes of Paris, is applicable to women of the same class everywhere, and, unfortunately, we must add, to women of a different class and merit in society, who, in order to obtund their griefs, caused by a drunken husband, or by other domestic crosses, have recourse, at first occasionally, to the bottle. A case illustrative of the additional dangers to which a female is exposed by the use of intoxicating drinks in her downward course to prostitution, and before she has regularly entered on the trade, came under our own observation many years ago. A beautiful girl, who, as she said, had been seduced by the son of an elderly lady in a neighboring State, with whom she was living as a dependent companion, came to this city. Here she soon "took up" with a young man, at whose request, as his professional adviser, we called to give her medical aid. She became pregnant after the second *liaison*, but whether she had been so after the first we did not learn. During this time she had gonorrhœa, from which she soon recovered. The child was, for awhile, in the hands of a wet nurse, and was afterwards put under the care of persons professing religion, but who were shamefully negligent of their trust. Happily, we ought perhaps to say, the child died in its second year. The mother, after the birth of her child, became addicted to the use of alcoholic drinks and narcotics. In one of the fits of delirium and stupefaction produced in this way, she wandered at night out to the commons, where she was found by persons, strangers to her, but who succeeded in discovering some of her acquaintances, lost characters like herself. This exposure and its concomitants cost her an attack of cholera, from which she recovered. She was now in a measure separated from the father of her child, and there was reason to believe that her conduct was anything but chaste. In the autumn of the year, she contracted bilious remittent fever, most probably from night strolls beyond city limits, and we were again called to visit her; this time at the house in which her child had died. Well do we remember the sore distress of this poor girl, not only from the raging of fever, but the stings of remorse. On one occasion she exclaimed: "If I die as I am now, I shall certainly be damned." She did die.

Prostitutes, as may have been already learned, are not "evil all." They have their good qualities, as Duchatelet shows, and as most medical men generally have had an opportunity of knowing. One of these is the readiness with which they aid one another in their troubles and misfortunes. They will stint themselves to help others of their class, who may have even previously deceived them, and from whom they expect no gratitude. Nor is this benevolence confined to one another; it is manifested often in their assisting the needy in their neighborhood. When they become mothers the better traits of their nature are brought out in strong relief. They find in the attentions required for their children an enjoyment which compensates them for the distresses inherent in their trade; and they look upon their new dignity, in being mothers, as elevating them in their own eyes from the abject state into which they have fallen. Notwithstanding the unquestionable love of these women for their children, the administration has wisely enacted, both for the benefit of mother and offspring, that when the latter have attained the fourth year of their age they shall no longer remain in the domicil, either of the mistress of the house or of the mother who lodges in it. A prostitute, when she is pregnant, becomes immediately an object of tender sympathy among all her companions; but the evidences of this feeling are accumulated at the birth of the child. It is then who shall wash the child's linen; who shall nurse the mother; who shall hasten to despoil themselves for her benefit. If the child survives there is no want of a cradle,—the struggle as to who shall have the little being is carried so far that the mother seems to have no direction in the matter. It is an undoubted fact, we are assured by Duchatelet, that prostitutes who have children are much more disposed to keep and nourish them, than girls who are mothers for the first time after their fall from virtue, and even than many married women.

The fate of the children of prostitutes is adverted to by Duchatelet, but he is unable to furnish precise figures on this point. Great numbers of them die. Some of those who survive are well cared for by their mothers, who either place them out of the reach of their own moral contagion, or are very guarded in their deportment before them. Instances of quite an opposite nature must of course be expected to occur.

The relations of prostitutes to the *lovers and bullies* whom they select for their companions, are described in the present work. The author lays it down, as an invariable rule, that, if libertinage and the fervor of the passions are the first cause of prostitution, so soon as these unfortunates enter regularly on their new career, they are cold and indifferent to all those who approach them, even to a feeling of disgust which may be hidden under the caresses they lavish for the love of gain, or often to satisfy the cravings of hunger. We shall be the less surprised, therefore, at finding some of these women attach themselves in a special manner to one man, and thus trying to fill up the void in their hearts left by the wretched life which they lead, and the remorse which afflicts them. The social position of the lover must necessarily vary as greatly as the division of the class to which the girl herself belongs. Letters found in the prison and hospital, and appeals made to the proper authorities in their favor, exhibited the melancholy fact that among the lovers of these "women of the town," were persons who not only moved in good society, but who by their name and position could not fail to excite surprise when they were found to be compromised in such affairs. Figuring on these occasions were seen the general, the man of letters, the peer, and the financier, and successively all the other classes, down to the lowest in the social scale. Sometimes men of note, whose names are familiar to the public ear, have been seen at the bureau of the prefecture, asking for the discharge of these women, and defending and pleading their cause against the administration. This scandalous exhibition was chiefly noticeable in 1817, when it was intended to subject women of pleasure, (*femmes galantes*,) of a certain order, to a sanitary regime. At the time of Duchatelet's writing these cases were of rare occurrence. For the most part, the higher order of prostitutes choose their lovers from students of law and medicine, and from young lawyers,—being induced to do so by the greater pleasure they derive from persons of cultivated minds; but the number of women of this order is small compared with the mass of those of the town. The middle order of prostitutes enlist their lovers from the ranks of merchants' clerks and of tailors, both of whom constitute a numerous class in Paris: to these we may add apprentice hairdressers, itinerant musicians and others of this class in the small drinking-houses of the suburbs; also jewelers and goldsmiths. Below these again, are the women who form a connection with workmen of every kind, bad fellows who are found in every crowded community, and more particularly in large capitals, the peace of which they are ever ready to disturb, whether this be done by ordinary breach of law or by participation in political revolutions. One of the phases in the life of prostitutes which merits most study is the extreme attachment evinced by them for their lovers, from whom they often obtain no money, but whom they frequently supply in this way as well as feed and clothe, out of the gains of their trade. The return which they are apt to receive for all these practical demonstrations of regard is abuse and bad treatment, extending to bodily injury and sometimes to severe wounds. Extraordinary examples of this nature are related by the author. The letters of the prostitutes when in prison exhibit the intensity of their passion for their lovers: these missives breathe an exaltation of feeling and imagination, but never contain anything smutty or vile. Sometimes they take vengeance by inflicting bodily chastisement on those who have supplanted them, and a few even assault their lovers who have abandoned them.

The lovers, so called, act the part of bullies for their girls, to whom, if on forbidden ground, they give notice of the approach of inspectors, or they try to extricate them from the hands of these latter, by making a disturbance and collecting a crowd so as to get the girl away, or failing to do this, they come to blows with these officials. In addition to the direct robberies which the bullies commit, they plant themselves in low taverns and drinking-shops together with prostitutes, foment all kinds of disorder, and trick or frighten novices into paying for the whole company. In fine, they convert these houses into a species of fort, in which they set the authorities at defiance, and sometimes are only expelled by the muster of two brigades of inspectors. These wretches, constituting themselves avengers as well as defenders of their favorite prostitutes, are always ready to play some ugly trick or another, and even inflict severe bodily injury on informers and others who are instrumental in checking the disorders or disturbances made by these women, or in getting them sent to prison for robbery. These bullies are a real leprosy in the community, which the authorities cannot reach, unless they were allowed the same supervision over them which is given in the case of prostitutes. One of the most sad and sickening comcomitants of prostitution is this connection between the women who follow it and their lovers so called. Strange and revolting love, when the woman is ready to prostitute herself to any passer-by, and yet all the time professes and really feels a strong attachment to one man; and this man consents to pass as the chosen favorite, and calls himself the lover of a woman, who supports him by the sale of her person promiscuously to others!

The unnatural passion which some prostitutes have for individuals of their own sex is a subject which the author could not dispense with noticing. He speaks of it with a reserve which we shall imitate, and pass on to other matters, after a mere mention of the designating title of the guilty women—*tribades*—and the remark, that the vice is said to be contracted in the ordinary prisons. This would be one among the many arguments in favor of the system of separate or cell confinement. Holding in mind the necessity of separation, an ordinance was issued in 1824, and is still in force, forbidding the keepers of brothels to allow two of their girls to sleep in the same bed.

A section is given to a notice of the *different classes* of prostitutes, the details of which would constitute desirable and even necessary information for those who might be authorized to take measures for subjecting these women to special police and sanitary regulations; but as the question of repression by such means is not a practical one under the existing laws of the United States and England, we shall touch lightly on it for the present. It will come up hereafter if an opportunity be given to inquire into the whole subject of amelioration and possible prevention. Of the different orders of bad women made by prostitution, the procuress is the most dangerous, because often not suspected, and the most mischievous, because she is continually on the alert to decoy inexperienced and innocent girls into the dens of infamy, under the plea of finding for them a safe and pleasant asylum until they can procure employment. Often she is the direct medium between a lecher and a girl, who, under various pretexts, is deluded into his embraces. Sometimes she is a broker who settles the conditions on which the man and woman meet. The most common disguise, in the way of regular business, which she assumes in Paris, is that of a dealer in articles for the toilet. In this capacity she finds access to every house. Purchasing only second-hand things, she is visited by women of all classes; some to sell what has been given to them, others to dispose of what they have stolen. Availing herself of the opportunities thus furnished, she is ever ready, with wicked counsel, to lead them into disgraceful situations. Some procuresses have their specialties, directing their attention only to one class, such as opera dancers and actresses; others carry on their business on a larger scale, and keep up a correspondence with the provinces and foreign countries, and send their victims to London and Brussels. Although they profess to have themselves abandoned prostitution, little reliance can be placed on their professions, and, at any rate, in their new calling they do infinitely more mischief than they could by their being merely prostitutes.

Walkers (*marcheuses*) constitute another division of those who, having given up the trade of prostitution themselves, still do service in the vile cause,—become messengers in brothels, and companions to the young girls of the house when the latter go to the bath, or to the prefecture of police. In the evening they stand at the door of the house (of ill-fame) and serve in place of a sign-board, to indicate its character to the passers-by. As apparently grave matrons escorting young girls, they enable these latter to evade the prohibition against their walking in particular parts of the Boulevards, or other frequented promenades.

The author prefaces his account of the different divisions of recognized prostitutes by some notice of a separate category of women composed of what are termed first, *Femmes galantes*, and secondly, of *Femmes à Parties*. The first are kept mistresses, whose expenses run beyond their allowances, and who, to increase their income, think themselves obliged to have sexual dealings with a certain number of the public. They profess great modesty and reserve when abroad, but contrive by a certain look or manner to indicate their true character to the initiated. They allow themselves to be escorted and followed; but, commonly, they receive the desired class of visitors at the houses of their friends, or at some private establishment. The second class do not rely on their personal charms alone, but enhance these by graces of manner and cultivation of mind. In order to obtain admission to their houses, it is necessary to be introduced by a regular visitor or *habitué*. They give dinners and suppers, and are invited to private saloons, to which company is attracted by the allurements of gambling and freedom from all moral restraints. Both these orders of women are, as Duchatelet very properly observes, prostitutes; but as conforming themselves to all the external observances of propriety, they escape the supervision of the administration, and may even sue for damages for slander if they are called prostitutes. They belong, notwithstanding, to the same scale as the regularly inscribed, including the miserable creatures who have no regular abiding place, and who are called girls of the barriers or soldiers' girls. These latter hang about the barracks and low drinking-shops of the suburbs, and, both physically and morally, may be regarded as the very dregs of the lowest and most turbid part of society.

A chapter is given to the *condition, physiologically considered, of prostitutes.* The plumpness or obesity of this class, and their fine, healthy appearance, strike all those who look at them in groups. There are, however, numerous exceptions; and one meets every day, women who not only exhibit nothing remarkable in these respects, but who are thin and even emaciated. It has been observed by persons who live among these women, that they rarely show embonpoint before they reach the twenty-fifth or thirtieth year of their age, or when only debutantes in the trade. There were not wanting persons, and some of them medical men, who believed that this fleshiness was due to the large use of mercury for the cure of syphilis, with which prostitutes are so frequently attacked. The better founded, and no doubt the true explanation, is the abundant alimentation and the indolent life of these women, and their frequent use of the warm bath, to which must be added their indifference to the future,—a frame of mind which one could not anticipate in this class of human beings. There are, of course, among them, as in the community at large, some ungrateful bodies which will remain lean in spite of all the means best adapted to give embonpoint. The prostitutes who go to the hospital, and those who are sent to prison, recruit their health, and come out less lean than when they entered. The remark has been made, that all classes of prisoners, even those condemned to death, gain flesh—a fact explicable, it is thought, by the regular life which they lead, added to the detention itself. If embonpoint be common among prostitutes, it is still more so with *dames de maisons*, or ladies so called of tolerated brothels, whose adipose development is truly remarkable.

A *peculiar alteration of the voice* has been noticed in prostitutes. There are some of these women remarkable for the beauty and freshness of appearance, their carefully arranged toilet, and the elegance of their manners, and who, by their carriage, one would take to be persons of refinement, possessed of everything that is pleasing and seductive. But what a disenchantment when they speak! In place of the quality of voice which adds to the charms of woman, there issues from their mouths nothing but harsh and discordant sounds, which crack the tympanum, and which a drayman could barely imitate! This harshness of voice, like embonpoint, does not commonly show itself before the twenty-fifth year of their age: it is most frequently met with among the lowest order of prostitutes who are loungers about petty taverns, and who, when intoxicated, are in the practice of uttering loud cries and vociferations, and also among those women who have fallen from the first to an inferior order of their class, and indulge in the crapulous appetites and low habits of their new associates. The causes of this vocal peculiarity are owing, Duchatelet thinks, to the excessive use of alcoholic liquors, and to the atmospheric extremes and vicissitudes to which the prostitutes are exposed.

Some *peculiarities* in regard to the *color of the hair, and of the eyes and eyebrows of prostitutes*, are inquired into by the author. Passing over his numerical estimates, we give his conclusions as relates to climatic influences. They are—1. That the varieties of black and auburn hair are more frequently seen in proportion as we pass from the north to the south. 2. That brown hair is less prevalent in the north. 3. That the blonde is more frequently seen as we approach the north from the south. 4. Finally, that red hair follows the same law as the blonde, and is not met with in the southern departments of France. The color of the eyebrows is like that of the hair, and the remarks made on the one will apply to those on the other. This is not the case, however, with the eyes. Of 12,454 women in whom this physiognomical trait was carefully noted, it was observed that the eyes in 4612 were gray; in 3529 brown; in 2878 blue; in 730 red; in 705 black. The proportions of each class in 1000 were, respectively, (omitting decimal parts of a unit,) 870, 283, 231, 38 and 30. Nothing positive could be inferred as to any relation between the color of the eyes and geographical position.

On the question of the *stature* of the prostitutes of Paris, Duchatelet has been enabled to give positive information, derived from documents which had been thrown aside. The original object in collecting them, and the quarter whence he obtained them, are not mentioned. They are exhibited in a series of tables, from which we cull a few items. In 14,126 prostitutes whose stature is recorded in these tables, there was one, from the city, of the height of three feet nine inches; and, on the other extreme of the scale, there was one, from the country, who was six feet and three-quarters of an inch high. If such a woman had met the eye of Frederick William of Prussia, father of Frederick the Great, he would have made, as the phrase is, "an honest woman of her," by having her married to one of his giant grenadiers. The stature of which there were the greatest number,—903, was five feet; after these come 883 who were five feet one inch in height; then 820 and 806 whose stature was, respectively, four feet eleven inches, and five feet and within a few lines of two inches.

The condition of the sexual organs in prostitutes is a subject which, apart from any other consideration, is important in its medico-legal bearings. Parent-Duchatelet, with an air of reticence, which is manifest throughout his work, had at first intended not to notice it; but his best friends assured him that, if his investigations were useful, they were, by right, no longer his, but were due to science and justice. He yielded to these opinions, the more readily, perhaps, from the recollection of some facts closely connected with the question proposed. Many years before, as he tells us, two young girls of very decent appearance were accosted in broad day by some young men, who lavished on them the most opprobrious epithets. Persons on the spot sided with the girls, and a complaint was lodged against their traducers, who were summoned before a magistrate. During the discussions to which the affair gave rise the girls insisted on their being virgins, and fearing that they would lose their cause by the weight of arguments on the other side, they expressed their readiness to be examined by a physician appointed by a magistrate, and qualified, on oath, for undertaking the task. The report of the improvised expert, who was an able and conscientious man, was to the effect, that in the case of one of these young women it was impossible for him to give a decided opinion, and as to the other, he thought it not unlikely that she had had connection with men, but he would not venture to speak positively on this point. Duchatelet does not remember what decision was reached on the occasion, but it was afterwards ascertained that these two *soi-disant* virgins had been not only for a long time inscribed on the registers of the police, but had several times contracted the venereal disease. Again, Duchatelet says, that in many instances of alleged rape, he could not gain any more satisfactory information from the details furnished by the young females themselves than from an examination of their persons, and hence he always avoided making any reports on the subject, for fear of compromising the interests of justice. Putting aside popular belief and the slang of old libertines in both the higher and lower walks of society, which imply that the genital organs of prostitutes cannot help exhibiting changes and evidences of a peculiar condition, Duchatelet made careful inquiries of the physicians and surgeons of the Dispensary and of the hospital to which these women, when they fall into the hands of the police, are taken. The result was a unanimous declaration, that prostitutes, in the particulars just stated, exhibited nothing special or peculiar. In the case of young girls who had been engaged in prostitution before reaching puberty, it was found extremely difficult, not to say impossible, to infer their loss of virginity and their mode of life from an examination of their sexual organs. M. Jaquemin, after numerous examinations (4500) of this nature, was led to announce, as an almost certain sign of pregnancy, a violet color of the entire mucous membrane of the vagina. In discussing the present theme, a question comes up respecting the state of the clitoris in prostitutes, among whom it is thought to be larger than in other women. This belief is not, however, borne out by actual observations made on a large scale. The author mentions three cases of extraordinary development of this organ; in one of which menstruation had never taken place, and the mammæ were entirely wanting. This person had become a prostitute to make a livelihood, but she always felt the greatest indifference for the other sex as well as for her own. The other two women, although they had their regular monthly returns and fully developed breasts, expressed themselves in a similar manner respecting the coldness of their feelings for men, and for women likewise. The value of this statement will be felt, when taken in connection with the fact, that, in many instances of erotic passion indulged in by women for individuals of their own sex, as previously adverted to, there was no unusual growth of the clitoris. The appearance of a beard in women is generally believed to be accompanied by less femininity and some approach to the other sex in physical conformation and tastes. Duchatelet states that the three women, already noticed for the large size of their clitoris and want of the warmth of sexual feeling, had no beards; and he did not find in those that had this capillary growth any deficiency in regard to sexual organization or appetite.

Excessive development of the *labia majora* cannot be said to be a peculiarity of prostitutes. The state of the anus is spoken of by the author, as it may be supposed to be modified by indulgence in an unnatural and beastly practice, from which, it is a grievous thing to be told, few of the prostitutes of Paris are exempt. This crime, though not necessarily connected with prostitution, must, as one of its collateral effects, serve to excite disgust at this trade, even on the ground of refined sensuality and pain, viewed morally; and ought to prompt to combined efforts toward its diminution and mitigation, if not its entire cessation.

Menstruation, in the degraded class of women whose physiological state we are studying, is, with many individuals, quite regular, in others the reverse; but, notwithstanding the most careful and minute inquiries, Duchatelet was unable to learn the circumstances under which these differences occurred. The excesses of all kinds in which these women indulge, and their exposure to atmospherical vicissitudes, cannot fail to interfere often with the functions peculiar to their sex.

Investigations, both direct and comparative, made on a large scale, authorize Duchatelet to assert that, although prostitutes are far from being as *sterile* as is commonly represented, they are *less productive* than the same number of women who lead a regular life. On one point, akin to this subject, there is unanimity of opinion. It is, the frightful mortality among the recently-born children of prostitutes. Of eight children born in the prison (period not stated) four died in the first two weeks after birth, and four in the course of the first year. Of ten children born in the hospital during a twelvemonth, five died at the very moment of their birth, and the other five before the entire recovery of their mothers. At the Maternité, or great Lying-in Hospital of Paris, in which prostitutes are allowed, but not known as such, to enter and be delivered, their labors are always tedious and difficult, and require the use of the forceps. The children for the most part die.

The *influence of the trade* of prostitution on the general health of those who practice it, is stated by Duchatelet with his habitual care and conscientiousness. The result of his inquiries is, that prostitutes are not more subject than other women to ordinary diseases. Under this head we do not include itch and syphilis, to both of which these unfortunate creatures are peculiarly prone, and from which, especially the latter, they suffer so terribly. Syphilis forms the subject of a separate chapter in the second volume of the present work. Another exception to the general proposition just laid down, is found in uterine hemorrhage, to which, the author believes, they are more subject than other females; this is especially noticeable in very young persons of this class, whereas such hemorrhages are very rare in virtuous girls of equally tender age. Surprise will be felt at a mention of the fact that prostitutes are not more liable than other women in the community to organic diseases of the uterus, including cancer itself. Recto-vaginal fistula, following abscesses in the partition between the two cavities, and which are sometimes caused by neglected chancres, might, putting aside this latter cause, be supposed to afflict prostitutes more than the individuals of their sex who lead a regular life. Strange to say, this infirmity, as painful as it is disgusting, is frequently no obstacle to the woman continuing her trade of prostitution, and even becoming a special favorite in it. The scrofulous constitution is very common in this degraded class, and contributes largely to the crowding of the wards of the Infirmary, and to the aggravation of syphilitic affections. To it we must attribute the incurable ulcers, cutaneous affections, and loss of nose so common in the inmates of that institution. Prostitutes, as we might suppose, *à priori*, are more subject to insanity and suicide than the rest of their sex. As relates to the period spent in the hospital by each individual of one entire class of prostitutes, we learn that it may be rated at ten days in the year.

In all our observations on the diseases of prostitutes, it should be borne in mind that we have not to deal with a class of persons who, once engaged in the trade, continue to ply it during the rest of their life. Prostitution is, on the contrary, a transition state, which its followers try to escape from as soon as they can; and hence, although the ranks are always filled, the persons are continually changing. Three years is, for the majority, the ordinary period of this vile service. But in this time how many are carried off by death or rendered entirely helpless by protracted disease! Where, it will be asked, with a natural feeling of curiosity, do these birds of passage wing their flight and settle down during the rest of their life? Duchatelet devotes to this question a chapter which embodies answers to the inquiries made by him in all quarters. The majority of the prostitutes who do not die while engaged in their trade, attach themselves to old bachelor or widower workmen, especially scavengers and rag-gatherers, and, while passing as legitimate wives, take care of these men, prepare their meals, etc. Many, however, after the death of their companion, being without resources, get themselves inscribed once more, and fall back on their old trade. Some engage in various employments common with the sex,—laundresses, fruit-sellers, dealers in articles of the toilet, etc.; but, at the same time, a number of them act as agents for those who pander to the licentiousness of the other sex, such as keepers of brothels, etc. Some go out to service; some, but in small number, get married; others become kept-mistresses to men who apply in due form at the office of registration to have the names of their favorites erased from the list of inscription. Among these bailers out we find mentioned "seven rich Americans;" whose names of course are not given. Not a few prostitutes addict themselves to robbery, and are associated with the thieves of every kind who swarm in Paris. A small number, repenting of their vicious life, retire into asylums, in which they pass the rest of their days.

Here we must put aside, at least for the present, the volumes of Parent-Duchatelet. We would like, for the benefit of our readers, to continue in his instructive company, and to repeat the prominent passages in his chapters on various phases of prostitution yet unnoticed, as well as on the police and sanitary regulations adopted by the French authorities for the regulation and health of prostitutes; the various establishments in which they live; the hospitals in which they are received for the treatment of disease, and the prisons to which they are committed for crimes. Not only must we pass over these topics, but also leave untouched the separate and more or less full accounts of prostitution in the other great cities of Europe, contributed, as a supplement to the present work, by the able editors, MM. Trebuchet and Poirat Duval. This portion alone amounts to 500 pages. If, hereafter, we should look over the large field of prostitution and its melancholy causes and concomitants, as they are found on English ground, and especially in London, Mr. Acton's volume would be put into active requisition. The condition of things in our own country ought also to engage attention. This can be done more effectually after a knowledge of the details and method of inquiry furnished in the great work of Parent-Duchatelet.

ART. II.—*An Essay on the Pathology and Therapeutics of Scarlet Fever.* By CASPAR MORRIS, M.D., Fellow of the College of Physicians of Philadelphia, Member of the American Philosophical Society, etc. Second edition. 8vo., pp. 189. Lindsay & Blakiston: Philadelphia, 1858.

To every one sufficiently familiar with scarlatina to have felt how imperfect is our knowledge of its pathology, and how powerless our resources for the relief of some of its severer forms, the announcement of a work devoted especially to its consideration, and embracing in its pages "the result of more than thirty years' observation in various public institutions as well as private practice," will be received with pleasure; in the hope that the teachings of so long an experience may have revealed to the author clearer views of its nature, and established the principles of a more successful treatment. The volume that comes before us thus recommended, is essentially the republication of a course of lectures which appeared in the *Medical Examiner* for 1851, although very much enlarged and improved, by the addition of new cases, and more recent observations, together with an alteration in the style of the work throughout, adapting it to its new position as an essay. It is no doubt due to its original lecture form, that we find in the treatise a want of strict method, that interferes somewhat with the convenience of ascertaining the author's views upon particular points without overlooking the whole book; this would not be felt, however, by those seeking for facts rather than opinions.

After picturing the dread which justly invests scarlet fever, from its treacherous nature and the rapidity of its course, the author proceeds to the "careful investigation of its character, cause, and treatment." For convenience of description he arranges the cases, according to the usual division, into simple, anginose, and malignant, designating as irregular, "those which are not reducible within the limits of either of these classes, though, evidently, derived from the same origin." He reminds us, however, "that divisions are arbitrary," and that "all varieties are but phases of one disease, which fall into each other by imperceptible shades, so that while the cases which may be assumed as types of each class have strong marks of distinction, there are others which it is difficult to distribute to either." The simple form he assumes as the normal condition of the disease, being that which is generally found in sporadic cases,—although sometimes prevailing in wide-spread epidemics,—while the anginose and malignant, associated with irregular types, predominate during every severe epidemic prevalence of the disease. The descriptions that follow these different forms are clear and full, consuming upwards of twenty pages, and including many curious illustrative cases, especially in the malignant and irregular divisions. In speaking of important symptoms the author lays much stress upon the frequent pulse. He says: "the physician is sent for, and finds the pulse beating with a rapidity almost pathognomonic of the disease, so that if precluded from any other mode of investigation, he might, with but little danger of error, decide the case to be one of scarlet fever. There is no disease in which there is the same condition of the circulation, with the single exception of the fever of puerperal women." This acceleration of the circulation in scarlet fever seems to have been constantly observed, and by all acknowledged to exceed that of febrile diseases generally of the same degree of violence. It expresses irritability rather than inflammation, and is probably due to the impression of the poison on the sympathetic nervous system, or directly on the muscular tissue of the heart and vessels. It varies with different epidemics and forms of the disease, and is increased by any measure that reduces the vital force of the patient. Extreme frequency of pulse, without proportionate strength, therefore, must be regarded as an early indication for supportive treatment. The author notices greater frequency of pulse, with less force, in the anginose than in the simple form, "corresponding in this respect with the general want of tone of the whole system." Of symptoms referable to the skin the author alludes to the heat of surface, the eruption, and desquamation. He considers "it has been a common error to suppose that the more vivid the eruption the more favorable was the prognosis. Enlarged experience has disproved to me this assumption; many fatal cases are marked by a rash of an intensely bright color and universally diffused." This last assertion is undoubtedly so, but does not, therefore, destroy the more general truth of common opinion upon this point. Vividness of eruption indicates a corresponding integrity of vital force, and although such cases are liable to fatal issue, the mortality among them is not so great as among those asthenic forms characterized by dull and deficient efflorescence.

Of desquamation, he speaks, as "one of the most uniform and characteristic features of the disease," by some writers regarded as a constant concomitant, occurring even in those cases where there is no unusual heat of skin nor eruption. This process, usually considered due to disturbance of nutrition, resulting from congestion of the cutaneous capillaries, is, by Dr. Graves, as cited by the author, ascribed "to a specific influence of the peculiar miasm, rather than to an inflammation of the dermoid tissue itself:" an explanation, however, that does not throw much light upon the special pathology of exuviation.

In relation to the phenomena of disease manifested in the mouth and throat, the author remarks: "The eruption of scarlet fever is *always* found in the throat, if it affect the external surface; I do not mean the inflammation which constitutes the *anginose* variety. Even in the most simple case the mucous membrane presents an appearance quite analogous to that of the skin. The projection of the elongated papillæ through the white fur on the tongue, once thought pathognomonic, is less to be relied on. I have been deceived by it. Not so, however, the appearance of the tongue on the second or third day. The sudden throwing off of the coat of fur, while the surface is left red and glossy, is decidedly characteristic, and will never deceive, as it occurs in no other disease at this early period."

The tendency to diffuse inflammation, followed by exudation of lymph, with or without ulceration of the tissue beneath, is particularly noticed on account of its liability to extend to adjacent parts, and thereby give rise to serious complications. The author states that "in the anginose malignant forms, the extension of the disease to the larynx and trachea is by no means uncommon," and he believes more careful observation will confirm the suspicion he entertains, "that the disease known as diphtheritic croup—which begins with inflammation of the tonsils and exudation of lymph, gradually extending to the larynx—is one of the forms of disease now under consideration." He is led to this conclusion by having observed that such cases are particularly prevalent at the times when the scarlet fever influence is most active, and from their evident dependence on some other cause than the mere vicissitudes of temperature, which give rise to the inflammatory croup. The rapidity of the circulation, the tendency to gangrene of the throat, the general similarity of all the symptoms to those cases of undoubted scarlet fever, in which the disease extends to the larynx, the frequent appearance of several cases in immediate succession in a family, and its occurrence simultaneously with the prevalence of malignant scarlet fever, all tend to confirm the author in this impression.

The formation of false membranes is not more frequent in scarlet fever than in the other exanthematæ; it is associated with catarrh, with hooping-cough, and in fact generally with those diseases liable to affect the mucous membrane of the lungs or throat, when occurring in a severe epidemic form; this diversity indicates that diphtheritic exudation is not peculiar to any disease, but that it depends upon a morbid condition of the blood, which may be brought about by a variety of circumstances, and frequently is by those that favor the development of epidemics.

The term diphtheritic croup is in general received as synonymous with the pseudo-membranous form; but when our author speaks of it as beginning with inflammation of the tonsils, of its tendency to gangrene of the throat, and of its disposition to assume epidemic features, he evidently does not refer to primary pseudo-membranous croup, but to that secondary form which follows pseudo-membranous inflammation of the fauces, and which more properly should be considered as a complication of that disease. If this be our author's meaning, he is not the first to entertain a suspicion of its identity with scarlet fever. Dr. Wood, in his *Practice of Medicine*, says: "From its resemblance to the malignant sore-throat of Fothergill, Huxham, and others, with which by some writers it is maintained to be identical, and from the simultaneous occurrence of both these affections with epidemic scarlatina, and the close analogy of their local symptoms with the throat affection of that disease, the inference is not without plausibility, that they may all be produced by the same cause, in those cases in which they have an epidemic or contagious character." There are many reasons, however, that oppose the idea of identity, even between diphtheritic angina and scarlet fever. A prominent one is the fact, that the diseases are not mutually protective of each other, which should be the case if they were of one origin. No disease is less liable to secondary attacks than scarlatina, no matter in which of its varieties it may occur; and yet, it is not uncommon for membranous angina to occur in persons previously affected with scarlet fever. The following illustrative paragraph is from the *Dictionary of Practical Medicine*, by Dr. Copland. He says: "Some years since I attended, early in the winter, some of the children of a numerous family, residing a few miles from town, in a low and damp situation; they had had scarlatina, with very severe sore-throat, two or three years previously. On this occasion one of the oldest was seized with malignant angina, extending to the pharynx, and along the eustachian tube to the ear, with fœtid respiration and irritation of the larynx, producing a constant tickling cough. A similar affection spread to four of the younger children, and in two of them it was complicated with croup; the symptoms of which were severe, continued, and well marked in one, and more spasmodic and intermittent in the other. In these, ash-colored exudations covered the greater part of the fauces and tonsils, and extended down into the pharynx."

The occurrence of pseudo-membranous croup as a *complication* of scarlet fever, especially of its anginose form, is not uncommon, although as a rule in this disease, inflammation falls upon the digestive mucous membrane rather than upon that of the air-passages.

Dr. Tweedie states: "That in the dissections of scarlatina with anginose inflammation, which he has made, he has not seen an instance of membranous exudation extending into the larynx." On the other hand Dr. Copland says: "When the angina attending scarlatina is not of a malignant kind, the larynx and epiglottis seldom betray disorder. But in malignant cases, and in adults, especially those who have been addicted to the use of spirituous liquors, or whose constitutions are broken down, this extension of inflammation to the larynx and trachea is not rare."

Other numerous complications are observed and described, but do not call for particular mention. In relation to the diagnosis of scarlet fever there are many points of interest. In those cases where the sequence of morbid phenomena is uninterrupted throughout, they are in themselves quite sufficient to distinguish the disease; but in scarlet fever, as in other diseases produced by contagion, it often occurs that the whole train of symptoms which usually characterize the malady are not present—one or more being suppressed, or so faint as to escape observation. Under these circumstances, we are compelled to rely upon external conditions, exposure to infection, or the existence of an epidemic to indicate the character of the disease. Happily in practice, sporadic cases, that might not otherwise be suspected of originating in a specific cause, are apt to be stamped with all the ordinary features of the fever,—the eruption, frequent pulse, hot skin, etc., while those of greatest doubt occur during epidemics, when the attention is fully aroused to the prevalence of the malady. Unquestionably, coincident existence of the disease justly decides the origin of many a perplexing case; this is particularly felt in those irregular types, where death occurs so early as to give no time for the development of consecutive symptoms, and where the diagnosis must necessarily be, in a great measure, inferential.

The presence of the eruption was at one time considered essential to establish the existence of true scarlet fever. But the occurrence in individuals of a constitutional affection of similar duration to scarlet fever, having the rapid pulse, the diseased throat and fauces, desquamation of the cuticle and consecutive dropsy, at the same time the capability of propagating eruptive forms of the fever, has been so fully and frequently attested, that the unity of origin of the two conditions is now scarcely doubted, and by some authors this peculiarity has been adopted as the basis of a new division. But further than this, there are cases in which there is not only absence of the eruption, but also of the sore-throat. These are mentioned by Dr. Copland as latent scarlatina, and considered by him to be due to the same cause as the ordinary forms, from their occurrence in different individuals of the same family at the same time, from having similar complications, and more especially from "the very frequent appearance, in these cases, of renal affection, of albuminous urine, and consecutive dropsy or inflammation."

Our author adds his testimony to the frequent occurrence of such cases in certain epidemics, and speaks of them as presenting "merely febrile disturbance, followed by desquamation and anasarca." From these considerations it appears that fever, with unusual frequency of pulse, an eruption on the second day, with anginose symptoms, and after that desquamation of the cuticle and subsequent dropsy, constitute typical scarlet fever, and that each or many of these symptoms may be partially or entirely suppressed, leaving others in position to characterize the disease. Dr. Morris dwells at some length upon the means of distinguishing this disease from measles, variola, and typhus fever, and mentions a rash often accompanying indigestion in children, that very much resembles it, but that may be recognized by the less frequent pulse, the subsequent absence of desquamation, and the condition of the tongue on the second or third day in scarlet fever, which is left red and glossy by the sudden throwing off of the coat of fur.

Concerning the cause of scarlet fever our author does not long delay. He says: "That it depends on some unknown agency, producing what is called epidemic influence, no one denies. In what this influence consists it is impossible to determine with our present limited knowledge and means of observation."

In proof that this "unknown agency" is a specific material cause, Dr. Carpenter thus reasons: "It may be admitted that our belief in a specific material cause for a great part of the effects set down to the action of 'morbid poisons,' is merely inferential. But it must be remembered that the evidence of chemistry itself is often purely inferential, for we recognize the presence of a chemical substance, not merely by obtaining it in a separate form, but by witnessing the reactions which it displays with various tests; and there is one substance, fluorine, which has never yet been isolated, and of whose existence, however, no chemist would hint a doubt. Even could we obtain these poisons in a separate state, and could subject them to chemical analysis, we should know much less of their most important properties than that which we can ascertain by observations of their actions in the system; this alone affording the means of judging of their dynamical character, which is of far more importance than a knowledge of their chemical composition. In the case of those poisons capable of being introduced by inoculation, we have indeed the required proof of their material existence, and this proof is capable of being extended, by a safe analogy, to infectious diseases generally. For if smallpox can be communicated by the inhalation of an atmosphere tainted with the exhalations of a person already affected with it, as well as by the introduction of the fluid of the cutaneous pustule into the blood of another, it can scarcely admit of a question, that the same poisonous agent is transmitted in both cases, although through different media, and that it has as real an existence in the transferred air as in the transferred pus."

Efforts have been made to obtain, by inoculation equally, strong evidence of the material character of the poison of scarlet fever that exists in smallpox, but with varying success. Dr. Copland, however, considers it has been demonstrated. He states that Sir B. Harwood and others have tried to inoculate healthy children with the fluid from vesicles, sometimes intermingled with the eruption of scarlatina, in hopes of producing a milder disease, as in smallpox; but although the disease was thus communicated in many instances, no mitigation of its type was thus obtained. In a case which came under his own care, the disease was produced by the contact of a small portion of the discharge from the throat of a person with malignant anginose scarlatina, and the patient thus infected had the disease in the most severe form, and recovered with difficulty. The conclusiveness of these cases is impaired by their seeming to indicate that different forms of the disease have the property of reproducing their own types when inoculated, a fact at variance with the experience of inoculation in smallpox, and conflicting with that afforded by the well-known diversity of cases occurring during every epidemic prevalence of disease. Our author advocates warmly the contagious nature of scarlet fever, regarding the question as one not merely of speculative interest, but possessing highly important practical bearings. He believes the principle of contagion may attach itself to the clothing worn by patients, or long exposed to it, and thus transmit the disease, but his own observation leads him to deny the possibility of communication by mere transient intercourse. He cites many curious and interesting cases corroborating these views. The period of incubation he considers more uncertain in this disease than in any other of the same class. The extreme lengths of the interval between exposure and sickening, that have come to his knowledge, are forty-eight hours, and twenty-eight days; from eight to fourteen days being, however, the usual interval.

In speaking of epidemics of scarlet fever, Dr. Morris notices their tendency to occur at irregular periods, the intervals being marked by the prevalence of the disease in a mild form, or its entire disappearance; for these intervals are at times so protracted that a recurring malignant epidemic has repeatedly been described as a new disease, a whole generation of medical practitioners passing away without its appearance. He mentions that in the year 1831 a highly respectable physician, very extensively engaged in practice, told him he had never seen a fatal case of scarlet fever, his testimony corresponding with that of the bills of mortality for the period during which he had pursued his professional career. In some instances a grand epidemic cycle appears, composed of series of minor epidemics.

Our author thinks secondary attacks of scarlet fever do occur, although less frequently than in some of the other exanthematous fevers; and that, as in variola and measles, they are more frequent in those who have suffered with its most severe forms. It would appear as though, in those persons, there was a greater degree of susceptibility to the influence of the contagious principle or epidemic miasm, while there are others in whom this liability exists but slightly at any period of life. As a rule, however, one attack of the malady gives to the person immunity for life. The question, on what does this susceptibility depend? is not settled, some authorities referring it to changes in the blood, others to altered states of the organic nervous system. Dr. Carpenter, after speaking of the tendency to increased susceptibility during depressed conditions of the vital powers of the system, when there is a tendency to putrescence in the excreted matters, as in the puerperal state, or when there is a special source of decomposing matter in the body, says: "Thus then we may affirm with strong confidence, that the liability to zymotic disease depends upon a previous condition of the blood, and more especially on the presence of fermentable matters resulting from the ordinary processes of disintegration, which, in the state of perfect health, are eliminated as fast as they are formed, but of which an accumulation is prone to take place, either when there are special sources of an augmented production, or when the excretory operations are imperfectly performed."

On the other hand, Dr. Copland says: "That the immunity obtained by an attack of those diseases which infect the constitution only once cannot be imputed to any change in the blood consequent to such infection, may be inferred, first, from the impossibility of a permanent change in this fluid, that could prevent the recurrence of any alteration in it which had taken place on some former occasion; and secondly, from the gradual and entire renewal of this fluid, after longer or shorter periods, a renewal of susceptibility inevitably supervening, if this property resided in the blood. We must therefore refer the immunity from a second infection to the organic nervous system, and view the susceptibility of this system to have been so affected or specifically changed by the first operation of the poison as no longer to be capable of being roused, by any subsequent application of the same species of poison as previously affected it, to a similar series of morbid changes and actions."

"We may now proceed," with the author, "to the consideration of certain results of scarlet fever, which are more durable than the disease itself, quite distinct in their character, equally, perhaps more, to be deprecated than the primary disease, known as sequelæ." He divides them into two classes:—

First. "Those which appear to be a mere continuation of the local lesions developed during the course of the disease and confined to the same vicinity: sloughing and ulceration of the throat; diseases of the ear, often extending to the bony structure; abscesses about the neck; and, in some rare cases, disease of the cervical or dorsal vertebræ, resulting in caries;" and—

Second. "Those which are less directly connected with primary causes and congestion of the kidneys." Among the most important of the second class, the author places "that destruction of the cuticle by the cutaneous inflammation, which gives rise to the process of desquamation." And considers, at length, the question, how far other sequelæ, inflammation of the kidneys, dropsical effusion, and endocarditis, may depend upon this interruption of the functions of the skin.

Disease of the kidney he does not attribute to this cause, but supposes both organs affected simultaneously by one agency; that the same diseased action may be established in the Malpighian bodies and epithelium of the uriniferous tubules, as is observed on the external integument; this he thinks probable from the fact that the flow of urine is always much diminished about the time at which desquamation is at its height, and by the appearance, at this juncture, of epithelial scales, abundantly in the urine. He considers both the skin and kidney are equally interested in the production of sequelæ, accompanied with serous effusion. These he considers in the order of frequency in which they occur; first the cellular tissue of the skin, then the pleural sac, or the pulmonary tissue, and after this the ventricles of the brain and the pericardium. Cerebral effusion he regards as the most formidable of this group. It is indicated by the occurrence of stupor, or violent headache and vomiting; the pulse is slow; one or both pupils dilated; vision is impaired, or lost entirely; and there may be strabismus, or even general convulsions, or paralysis. A doughy, pallid, puffed face, is always to be considered an indication of danger, even though the quantity of urine is large. The urine must not only be abundant, but charged with its saline constituents. It is not the mere leakage of watery fluid that restores the normal condition of the blood, and until this is effected, the patient is still liable to serious complications. There is much discrepancy concerning the pathology of this condition; it is ascribed by some to uræmic poisoning of the blood, by some to meningitis, and by others to mere passive effusion of serum into the meshes of the pia-mater, the ventricles of the brain, or into the substance of that organ. Our author attributes it to the combined influence of a poisoned state of the blood—partly due to the primary cause of scarlet fever, partly to the impaired action of the skin, and still more to the interruption of the function of the kidneys caused by the congestion, and, perhaps, inflammation of these organs—and serous effusion within the cranium; nor is he at present disposed to attribute the effusion to active inflammation of the encephalon.

Before entering upon the details of treatment, the author remarks: "That there is one idea which should be ever present to the mind, as the regulating principle by which every plan of treatment must be conducted, and which shall place decided limits to the extent to which any course may be followed. Whatever peculiarities may mark the epidemic character, or vary the individual case, scarlet fever, in all its varieties, is a disease which has a specific origin, a fixed course, and a certain termination." The effort on the part of the physician should be, therefore, not to curtail the duration of the disease, but to assist the patient to endure it, and avert, if possible, tendencies to local destruction.

In the simple form, the treatment suggested consists of a mild laxative of calcined magnesia, given on the first day, followed by a gentle refrigerant, as lemonade, with neutral mixture, and a small quantity of spirit of nitrous ether, to promote diaphoresis; the avoidance of fatigue and exposure, and the adoption of a careful diet, not only during the four days of febrile action, but until the desquamation is complete. No animal matter, either solid or in the form of broth or soup, should, on any account, be allowed during the first four days. When the nervous symptoms are more marked with twitching, trembling, or delirium, cutaneous ablutions should be employed conjointly with the former treatment; tepid sponging, or affusions of water at 96° or 98° of Fahrenheit, will be proper forms when the skin is hot and dry, the pulse quick and strong, with restlessness and delirium; when there is violent delirium, with great heat of skin, very frequent pulse, convulsions, or at least violent muscular twitchings, the cold douche to the head, maintaining the impression by cloths wrung out of ice-water, while the body is sponged with water at the temperature of the room, will be found the most efficient means to procure tranquillity. Bleeding, emetics, and the more violent therapeutic measures, the author disapproves of, preferring to rely on simple means, with entire rest. In the anginose form the only change of treatment usually demanded is external warmth and moisture, with the free use of ice internally; as the primary fever subsides, if the pulse loses its frequency, the skin becomes cool and moist, and the patient languid, quinine, given in moderate doses, at intervals of two or four hours, is highly important. Where the eruption is imperfectly developed or receding, capsicum is productive of the happiest results. It may be given, in weak broth, with safety, even to the youngest infants. In the malignant form the author recommends an emetic of ipecacuanha, or of eupatorium perfoliatum, early in the treatment; giving capsicum subsequently, to support vital power and to arrest local lesions in the throat; chlorate of potash may be given as an alterative, and when stimulation is necessary, wine-whey, beef-broth, highly seasoned with capsicum and quinine. The stimulating plan of treatment here advocated may prove pernicious if employed before there is unmistakable evidence of the failure of vital power. This, therefore, should carefully be regarded.

After considering at length the possibility of removing the susceptibility to scarlet fever by belladonna, the author thus concludes: "Though I have thus entered at large into the question on account of the positive assertions of the advocates of prophylactic treatment, and have endeavored to exhibit the manner in which, if at all useful, it operates, I have no faith in the prophylactic power of this or any other agent."

In the treatment of sequelæ Dr. Morris does not hesitate to use active antiphlogistic measures; they are inflammatory in character; and in severe cases affecting vital organs, the safety of the patient depends upon prompt and vigorous depletion. Local and general bleeding, calomel, digitalis, aconite and nitrate of potash, are some of the means he advises for their relief.

ART. III.—*The Uræmic Convulsions of Pregnancy, Parturition, and Childbed.* By DR. CARL R. BRAUN, Professor of Midwifery, Vienna. Translated from the German, with Notes, by J. MATTHEWS DUNCAN, F.R.C.P.E., Lecturer on Midwifery, etc. 12mo., pp. 182. New York: S. S. and W. Wood, 1858.

THIS little volume constitutes a single chapter in Dr. Braun's recent work on obstetrics, published at Vienna in 1857, and entitled *Lehrbuch der Geburtshülfe mit Einschluss der operativen Therapeutik, der übrigen Fortpflanzungs-functionen der Frauen und der Puerperalprocesse.* Dr. Duncan informs us in his preface that this chapter appeared to him so valuable, from its completeness and erudition, that he was induced to publish a translation of it in the *Edinburgh Medical Journal* for 1856–57. Partly in consequence of the favorable manner in which it was received by the readers of that journal, and partly from the want of any similar treatise in the English language, it has been republished in Edinburgh in its present separate form, of which the copy before us is the American reprint.

The work is divided into ten chapters, of which the first two are devoted to an account of the symptoms and pathogeny of the disease.

Eclampsia puerperalis is defined by Dr. Braun to be "an acute affection of the motor function of the nervous system (an acute neurosis of motility) characterized by insensibility, tonic, and clonic spasms, and occurs only as an accessory phenomenon of another disease, generally of Bright's disease in an acute form, which, under certain circumstances, spreading its toxæmic effects on the nutrition of the brain and whole nervous system, produces those fearful accidents." Unfortunately the disease has an extensive synonymy. It is the epilepsia ex utero of the ancients, the dystocia convulsiva of Young, the dystocia epileptica of Merriman, the encephalopathia albuminurica of Legroux, and the allgemeine Krämpfe, or schwere Convulsionen of Wigand. In this country and in Great Britain it is called by different writers puerperal convulsions, acute epilepsy, renal spasms, uræmic convulsions, epilepsia renalis, albuminurica, eclampsia gravidarum, parturientium et puerperarum. With the French it is the convulsions des femmes enceintes et en couche.

Under the general name of "Eclampsia" have been confounded several pathological conditions differing from each other in many of their symptoms, though exhibiting in common both tonic and clonic spasms, and accompanied with loss of sensibility and great danger to the life of the patient. The eclampsia gravidarum, according to Dr. Braun, is commonly due to that form of blood-poisoning which results from the retention and decomposition of urea in the blood, or the retention of the excrementitial, extractive matter of the urine. Hence uræmic eclampsia is not peculiar to pregnancy, since toxæmic conditions may give rise to it not only in the non-pregnant female, but also in children and in men. Another form of eclampsia, presenting somewhat different symptoms, results from the defective elimination of carbonic acid, bile and other matters which in a state of health are freely and constantly separated from the blood. There is also a phlegmasial variety of eclampsia, known as the cerebral or apoplectic, and originating from meningitis, encephalitis, intermeningeal apoplexy, thrombosis of the longitudinal sinuses, and hyperæmia of the brain, spinal cord or medulla oblongata. Eclamptic attacks are sometimes very closely simulated by hysterical convulsions resulting from the reflection of some peripheral irritation upon the medulla spinalis or oblongata. Chemical and histological alterations of the serum and red corpuscles of the blood, as in hydræmia, leukæmia, hyperinosis, etc., are capable of producing this disease. Death following anæmia, brought on by a sudden and copious loss of blood, is often accompanied with eclamptic phenomena. Conditions similar to eclampsia are occasionally produced by mineral, animal, and vegetable poisons, such as preparations of lead, strychnia, conium maculatum, cicuta aquatica, œnanthe crocata, etc., and the inhalation of carbonic acid and carbonic oxide gases.

This formidable disease is characterized by a series of convulsive paroxysms rapidly repeated and accompanied with a complete loss of sensibility which is prolonged into the intervals between the fits. During a paroxysm the face and neck are swollen, injected, and of a bluish color; the carotids pulsate forcibly; the eyelids are prominent; the eyeballs roll convulsively in different directions; the capillaries of the conjunctiva are injected; the veins of the neck and face are turgid; the facial muscles strongly distorted; the mouth wide open; and the tongue generally protruded and often bitten; the trunk is twisted to one side, and all the extremities thrown into jerking motions. The respiratory muscles, especially the diaphragm, are in a state of contraction, so that respiration is seriously interfered with, and even asphyxia sometimes produced. Involuntary discharges of urine and fæces take place. Occasionally vomiting precedes the first fit. The skin is sometimes dry and hot, sometimes cool and moist. In some cases the pulse is frequent, in others slow. These symptoms are followed by a soporose condition in which the patient lies motionless, devoid of consciousness and sensation, and with the extremities stretched out and stiff. In this state the respiration is at first hurried, difficult and stertorous, afterwards slow and snoring. Sometimes, though very rarely, this sopor deepens into coma and lasts a whole day. Generally, however, after a period of time, varying from one-half to one or two hours, the paroxysm, if not fatal, remits; the respiration becomes slower and freer; muscular rigidity diminishes; the pulse is less frequent; the abdomen tender to the touch, consciousness returns slowly and very slightly, if at all, while the reflex sensibility, which during the fit was suspended, is often intense.

> "After awaking, patients generally complain of a confused, dull headache, and of great languor, which continue till a renewal of restlessness, stretching, extending, slow tremulous bending of the upper extremities, jerking of the facial muscles, with reddening of the face, announce a new paroxysm. The fits may be repeated several times in a day—sometimes as much as seventy times in a day. Generally after a few fits, complete unconsciousness supervenes, and this continues till recovery or death. Sometimes there are phenomena foreboding the coming on of fits. They consist of headache, giddiness, wandering of the ideas, increased heat of skin, mental illusions, seeing of lights, imperfectness of vision even to total blindness, (amblyopia, amaurosis,) with an enlarged pupil and staring look, noises in the ears, difficulty of speaking, lowness of spirits, pains in the præcordium, nausea, vomiting, palsies, irregular pulse, and great languor without any known cause."

It is well known that œdema, amounting sometimes to anasarca, often precedes and accompanies eclampsia gravidarum. This œdema, according to Prof. C. D. Meigs, is due to the same cause which produces the eclampsic attack also—the pressure of the gravid uterus upon the great arterial trunk and its main branches, and upon the veins and absorbent vessels in the lumbar region. Local or general infiltration of the areolar tissue, and over-distension of the encephalic blood-vessels are in his opinion cotemporaneous results of this pressure. Hence he regards this œdema, especially if it be accompanied with headache, tinnitus aurium, muscæ volitantes, vertigo, etc., as a significant warning of an approaching convulsion, and accordingly resorts to venesection ad deliquium to arrest the disease. Dr. Braun, on the other hand, after analyzing the numerous views entertained as to the cause of eclampsia, arrives at the conclusion that "the eclampsic convulsions of women during pregnancy must be considered to be identical with the fits of adults, in general, that are produced by uræmia in the course of acute Bright's disease." This doctrine, which he regards as "an axiom in theory as well as in practice," he announced in 1851, about the same time that Frerichs published his well-known essay on this subject. Concerning the concomitant œdema, he says:—

> "Only those œdemata of pregnant women which exist contemporaneously with albumen, fibrin cylinders, and fatty degenerated scales of Bellini's epithelium in the urine, have a connection with uræmic eclampsia. The œdema of the lower extremities, ascites, and hydramnios, which are not complicated with albuminous urine containing fibrin cylinders, are not followed by uræmic eclampsia in pregnancy or labor. The affection of the kidneys with disease cannot with certainty be inferred from the appearance of dropsy, as distinct causes may, at the same time, or one after the other, produce dropsies."

The coincidence of eclampsia and albuminuria has been frequently verified by Lever, Simpson, Devilliers, Regnault, Dubois, Danyau, Cazeaux, Cormack, Blot, Helfft, Frerichs, Litzmann, Braun, and many others. These two conditions, however, are not necessarily related to each other as cause and effect, for abundant observation has shown that in the progress of many diseases albumen may appear in the urine without the development of uræmic intoxication and convulsions. Albuminuria has been detected in persons laboring under articular rheumatism, thoracic inflammation, intermittent and typhus fevers, measles, cholera, chronic hepatic affections, etc. According to Robin, "the urine becomes albuminous in croup, in ascites, and in cases of capillary bronchitis, with emphysema, accompanied by dyspnœa; in pulmonary phthisis, in gestation when sufficiently advanced to occasion an habitual congestion of the kidneys; in cyanosis, diabetes, etc." Simon found albumen in the urine of persons apparently in good health; while Tegart, thirteen years ago, and Hammond, quite recently, experimenting upon themselves, detected albumen in their urine after feeding freely upon the white of egg. It is now pretty well settled that albuminous urine may result either from some alteration in the composition of the blood, from pressure upon the renal veins, or from some structural or functional change in the kidneys, and that it may exist independently of uræmia and puerperal convulsions. In fact albuminuria, general or local œdema, and puerperal convulsions, often coexist without being directly related to, or dependent upon each other.

Again, dropsy may occur during pregnancy, and the urine remain in a normal condition. In cases of albuminuria associated with œdema and eclampsia, our author assures us that the quantity of albumen has generally an intimate relation to the extent, intensity, and duration of the acute Bright's disease, which he regards as the primary cause of eclampsia, and not so constantly to the violence of the latter affection. The albumen generally increases, however, at the end of pregnancy, during labor, and during the eclampsic fits. In 1847, Cahen, in a thesis entitled "*De la Néphrite albumineuse chez les Femmes enceintes*," attempted to prove that the albuminuria of gestation could in all cases be traced to disease of the kidney. M. Blot subsequently opposed this view. He detected disease of the kidney in three only of seven women who died while laboring under albuminuria. It is well known that in almost every case albumen rapidly disappears from the urine, sometimes in a few hours after delivery. These facts, together with the absence of the characteristic renal symptoms, the greater abundance of the salts, particularly the urates, in the urine, and the consequent increase in the density of that fluid,—characters so different from those presented by the urine in Bright's disease,—emphatically negative the opinion of Cahen. It is probably true that by far the greater number of cases of œdema and albuminuria gravidarum are due to simple congestion of the kidney, resulting from the impeded renal circulation produced by pressure of the gravid uterus. It is equally probable also, that this pressure is the most common cause of œdema. But that eclampsia is always or even often produced by uterine pressure is by no means borne out by the facts.

> "The influence of simple pressure by the pregnant uterus," says Dr. Duncan, "seems to be much exaggerated. For in cases of ovarian dropsy, fibrous tumor, and a variety of other affections, no such result is observed from a pressure exactly like that of the gravid uterus, and often more severe and longer continued. Moreover, it is well known that a great number of characteristic cases occur before the uterus has so increased in size as to cause much pressure, and many after all extraordinary pressure is removed by complete delivery."

The question here presents itself as to the cause of puerperal eclampsia. The recorded observations and experiments of Prevost and Dumas, Segalas, Tiedemann, Gmelin, Mitscherlich, Bernard, Barreswill, Bichat, Courten, Gaspard, Vanquelin, Stannius, Frerichs, Bright, Christison, Rees, and quite recently of Hammond, show pretty conclusively that urea may exist in abundance in the blood without giving rise to convulsions or death. In 1851, Frerichs was led by his experiments to attribute uræmic intoxication not to urea nor any other ingredient of the urine, but to the presence of carbonate of ammonia in the blood, which he supposes to be formed from the urea by the action of some ferment. He assures us that he detected this salt in the blood and exhalations in all cases in which the symptoms of uræmia were developed. Dr. Braun adopts without reserve this theory of Frerichs as a satisfactory explanation of the origin of eclampsia puerperalis. The very recent experiments of Dr. Hammond "On the Injection of Urea and other substances into the Blood," are decidedly opposed to the views advanced by Frerichs. Dr. Hammond was unable to discover ammonia either in the breath, vomited matter, or contents of the stomach of the animals into whose circulation he had injected urea, both alone and combined with vesical mucus. He thinks that the ammonia discovered by Frerichs in his experiments was of accidental occurrence, and is not to be regarded as an invariable attendant upon the retention of urea in the system. He found that the action of substances introduced into the blood is very much influenced by the presence or absence of the kidneys. Thus urea, carbonate of ammonia and sulphate of potash, injected into the blood-vessels of sound animals, do not cause death. Nitrate of potash thus introduced is speedily fatal. Convulsions and death ensue from the injection of any of the above-named substances into the circulation of animals whose kidneys have been previously extirpated. Whether the kidneys be present or absent, urea introduced directly into the blood undergoes no conversion into carbonate of ammonia.

> "The condition of system," says Dr. Hammond, "remaining after extirpation of the kidneys, is, in many respects, analogous to that present during Bright's disease. In the latter condition the kidneys act imperfectly, and many substances which should be eliminated are retained in the organism. In the former there is, of course, no excretion of matter through these channels. In all cases, so far as I am aware, where the kidneys of animals have been extirpated and urea injected into the blood, death has supervened in a much shorter time than would have been the case had no urea been thus introduced into the system. I see, therefore, no great difficulty in ascribing the condition known as uræmic intoxication to the direct action of an excessive accumulation of urea in the system.
>
> "The fact that urea in large quantity has been found in the blood of persons suffering under Bright's disease, but in whom no symptoms of blood-poisoning were present, is no argument against the correctness of this view; for, doubtless, as with most other poisons, all persons are not alike sensitive to its action. Moreover, when the disease progresses slowly the rate of accumulation of urea is also slow, and thus the system, by becoming in a manner habituated to its presence, may be enabled to endure an excess without symptoms of intoxication necessarily attending."*

It thus appears, from these conflicting statements, that the pathogenesis of this important disease is yet far from being satisfactorily established.

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* See the number of this Journal for March, 1858.

The third and fourth chapters of the work before us treat of the connection of labor-pains with eclampsia, and the influence of the latter upon the life of the fœtus.

Dr. Braun cites numerous observers to show, as a matter beyond doubt, that eclampsia may appear independently of uterine pains.

> "Even with the most violent eclampsia, sometimes no pains are observed; the fits may cease and pregnancy go on for weeks; or pains already become active may disappear, and days may pass ere parturition takes place spontaneously; or, during the continuance of the eclampsia, complete absence of pains may be remarked, the patient may die of the fits before labor is ended, and a dead fœtus be extracted by cæsarian section from the corpse."

Our author thinks that the pains should be regarded as the effect rather than the cause of eclampsia; and he asserts positively that fits cannot be produced at will, nor even aggravated by exciting pains and increasing their strength.

> "We have made the observation," he says, "that under a high degree of reflex sensibility, convulsions cannot be induced at will at definite periods by violent irritation of the uterus; and that by the energetic use of the caoutchouc bladder-plug, very strong pains may indeed be produced, but no increased intensity, and no more frequent returns of the eclamptic fits, and that during colpeurysis* the convulsions themselves sometimes altogether cease, and the birth of the child takes place rapidly. * * * * The frequent occurrence of eclampsia during the first days of childbed evidently proves that there is a very subordinate relation between active pains and uræmic eclampsia. * * * * When the paroxysms are numerous, sometimes the appearance of a fit is contemporaneous with the acme of pain, sometimes with the interval between pains.
>
> "Convulsions, when they appear suddenly, are probably produced by the sudden decomposition of a quantity of urea.
>
> "Without uræmia, the most violent and painful uterine contractions produce no eclampsia in a case of Bright's disease; as, after long experience, we have frequently observed in women suffering from Bright's disease during pregnancy and natural labor.
>
> "If it happens that the uræmia is removed during pregnancy or labor, then the later and stronger pains generally are followed by no more fits.
>
> "With the disappearance of uræmia, the pains sometimes become weaker. During uræmia the uterus is never seized with tetanus. The consideration of these numerous facts makes it certain that the pains play a very subordinate part in cases of uræmic eclampsia.

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* This is a method of inducing premature labor. It consists in distending the vagina by means of a colpeurynter, or bag of caoutchouc into which water is forcibly injected and there retained.

> "Between eclampsia and the serous effusions there does not exist any constant relation. On the contrary, when the dropsy is very extensive, eclampsia is very rare, for the blood gets rid of a part of the retained urea by the serous secretions, and the uræmic intoxication may thus be kept off."

It is well known to obstetricians that the eclampsia of pregnant and parturient women is accompanied with great danger to the life of the fœtus. Kiwisch attributes the death of the fœtus under these circumstances to the stoppage of the circulation in the maternal vessels of the placenta during the fits. Our author refers it chiefly to the presence of carbonate of ammonia in the fœtal blood. In proof of this he asserts that

> "If, after numerous uræmic convulsive fits, the child is born still alive, a large quantity of urea is found in the blood taken from the umbilical cord; but if it is born dead, we can, immediately after the birth, demonstrate the presence of carbonate of ammonia in the fœtal blood."

In cases of eclampsia during delivery the mortality of the children amounts to 45 per cent. Where the convulsions occur after delivery, the mortality of the children born prematurely is 64 per cent.; and of those born at the full time 40 per cent.

Chapters five and six are taken up with the consideration of the etiology and pathological anatomy of uræmic eclampsia. In chapter seventh many important facts and arguments are brought forward to prove that a very intimate connection exists between eclampsia and uræmia. The differential diagnosis of the disease in question and other affections of the motor system of nerves is considered at length in chapter eighth. Chapters nine and ten treat of the prognosis and treatment of eclampsia and Bright's disease. Upon all these topics Dr. Braun has collected much valuable information which will fully repay an attentive perusal. Upon the whole this work is the most complete and erudite essay upon the subject of which it treats that we are acquainted with, and we only regret that our limited space prevents us from more fully laying before our readers the peculiar views of its author.

Of the manner in which the translation has been accomplished we cannot speak favorably. Though it appears to be a faithful rendering, it can by no means lay claim to elegance. The language is in many instances vague, obscure, and not wholly free from the peculiar idiomatic expressions of the German tongue; the sentences are often involved and clumsy, and occasionally the grammar halts.

ART. IV.—*On the Pathology, Symptoms, and Treatment of Ulcer of the Stomach; with an Appendix of Cases.* By WM. BRINTON, M.D., Fellow of the Royal College of Physicians, Physician to the Royal Free Hospital, Lecturer on Physiology and Forensic Medicine in St. Thomas's Hospital. 8vo., pp. 227. London: Churchill, 1857.

THE above work is a reprint, with some alterations and additions, of various papers on ulcer of the stomach, recently contributed by Dr. Brinton to the *British and Foreign Medico-Chirurgical Review*, the *Lancet*, and the *Association Journal*.

As many of our readers have probably already become acquainted with parts of this excellent treatise through the periodical press, we will limit ourselves to the consideration of the most striking points and questions connected with the subject of the author's inquiry. Dr. Brinton states in the preface, in allusion to the plan upon which he has conducted his researches, that wishing to make his inquiry a study from nature, he has drawn his materials exclusively from cases, either observed by himself or recorded by others. The fact that he has investigated a greater number of cases of gastric ulcer than any previous writer on the same subject, adds considerable weight to his opinions, and entitles his treatise to the particular attention of the profession.

The *first part* of Dr. Brinton's work treats of the *Pathology* of Ulcer of the Stomach, and contains all the information on this point which could be deduced from extensive and elaborate statistical researches. That numerical calculations made from the results not only of his own observations, but of about eleven hundred cases gathered from various journals, reports, and museums, would lead often to mere conjectures, the author himself readily admits. He sometimes, however, loses sight of this circumstance in the course of his investigations, and uses these conjectural deductions as positive facts; as, for instance, in establishing the etiology of perforating ulcer. We give in the following a very condensed abstract of the results Dr. Brinton has obtained from his researches, referring our readers for the details and numerical data to the monograph itself.

Evidence of the present or previous existence of gastric ulcer may be found in from 2 to 13 per cent. of persons dying from all causes; and the ulcer itself, open and unhealed, may be observed in from 1 to 10 per cent. The 7226 collected necropsies offer about 360 ulcers, which are pretty equally divided into 190 open ulcers, and about 170 cicatrices. These numbers nearly correspond to a total proportion of 5 per cent., which is divisible into $2\frac{3}{5}$ and $2\frac{2}{5}$ per cent., for these two conditions respectively. It is to be remarked, that the maximum frequency of the ulcer occurs in the spirit-drinking population of Copenhagen; and that its larger proportion in the German hospitals may be plausibly referred to the inmates of these institutions being, on an average, of greater age, if not in more destitute circumstances, than the persons annually received into English hospitals.

Ulcer of the stomach is twice as frequent in the female as in the male, and seems to be especially, though not exclusively, a disease of middle and advancing life. The posterior surface of the stomach, the lesser curvature, and the pyloric pouch, seem to be more liable to ulcer than the greater curvature and the cardiac sac. A plurality of ulcers in the same stomach was found in about 21 per cent. The shape of this lesion is usually circular or slightly oval, but is liable to some variation. The tissues around the margin of the ulcer may present every variety of appearance; in some instances there may be almost a complete absence of inflammation; in others, signs of inflammation may exist, associated with thickening, presenting the appearance of cancer. The base of the ulcer resembles the margin, and may be either firm and hard, or soft and flocculent. In progressing in depth, the ulcer forms a cone, with its apex directed toward the peritoneum, and results either in perforation or in adhesion of the stomach to some neighboring viscus; the latter mode of termination is found in about 40 per cent. of the cases. The disease is of very variable duration; in exceptional cases it has proved fatal in as few as ten days, by perforation; by exhaustion caused or hastened by vomiting; rarely by hemorrhage; generally, however, it lasts from several weeks or months to many years. Dr. Brinton records cases of 35, 30, and 20 years' duration. Cicatrization of the ulcer is about as frequently met with as the ulcer itself; in other words, half the instances of this disease undergo what is probably a spontaneous cure. Where the ulcer has been very large, its cicatrix frequently corresponds to a constriction of the organ, amounting in extreme cases to an absolute stricture impeding the transit of food, and thus causing gradual hypertrophy and dilatation of the over-distended segments of the stomach behind the constriction. Perforation seems to be an exceptional occurrence in gastric ulcer; the proportion of its frequency amounts to about 13·4 per cent. Quite in contrast with the simple ulcer, which especially affects middle and advancing life, and becomes more frequent in proportion to the age, is the perforating ulcer, which selects an earlier period of life, and the liability to its occurrence decreases as life advances. It is worthy of especial notice, that the greatest number of cases of perforation in the female occur between the ages of fourteen and thirty, while nearly two-thirds of that number are found between the ages of fourteen and twenty. As regards the situation of perforating ulcer, statistical calculations seem to prove that the anterior surface of the stomach, though more rarely ulcerated than the posterior, is more liable to perforation. The consequences of perforation are general peritonitis, proving fatal, or circumscribed peritonitis, with the formation of abscesses and adhesions to the abdominal wall or diaphragm, and consequent effusion externally, or into the cavity of the chest. The communication of the stomach with other parts of the alimentary canal, as the result of gastric ulcer, is generally independent of any such abscesses. It frequently becomes adherent to the liver and pancreas; more rarely to the spleen; the dangers of such adhesions are hemorrhage from an erosion of the vessels of these organs, and gangrene of the liver or spleen. The frequency of death from hemorrhage, in proportion to the cases of ulcer, is stated differently at 5, and at 3¼ per cent.; the latter average being obtained from a large number of cases, collected chiefly from British sources. In 52 of these cases the sex is mentioned—34 being male, and 18 female. As ulcer occurs twice as frequently in the female as in the male, the liability to a fatal termination by hemorrhage seems to be four times greater in the latter than in the former. In 34 cases the source of hemorrhage was in three instances the substance of the liver, in one instance the spleen, and in the remaining 30 cases a large vessel of the stomach, or of its immediate neighborhood; in sixteen of the twenty-nine instances in which the vessel itself can be named, the hemorrhage was the result of an ulcer which eroded the splenic artery in its course along the upper border of the pancreas. Concerning exhaustion or starvation, which forms another of the fatal terminations of gastric ulcer, statistical information could not be obtained. Of about 14 cases, however, collected by the author, seven probably died from exhaustion, in consequence of vomiting of food. Dittrich found three in 103 cases, in which death was caused by tabes referable solely to the ulcer. As respects the combination of gastric ulcer with cancer of the stomach, it is often limited to a cancerous degeneration or deposit that involves the brawny mass which is generally present in the base or periphery of an ulcer of long standing. The most frequent form, however, appears to be that in which a fungus, generally a bleeding one, shoots up from the base of a gastric ulcer. Lastly, in regard to the complications of gastric ulcer with other diseases, such as phthisis, pneumonia, diarrhœa, dysentery, and syphilis, the author judiciously remarks, that they merely seem to indicate that this long and exhausting malady predisposes the constitution to a variety of other diseases, and renders unusually fatal many of those attacks of illness which in the course of years very few persons altogether escape. This is the only probable, though vague, relation that seems to exist between gastric ulcer and disease generally; a direct causative influence between this disease and any special malady, we are by no means justified in assuming.

Finishing the first part of his work, the author illustrates how much we have yet to learn respecting even the more obvious pathological relations of gastric ulcer by the following summary: "Let us suppose that of every 100 ulcers of the stomach 50 cicatrize, 13½ perforate its walls, 3¼ erode its larger vessels, and 2 or 3 kill by the sheer exhaustion and inanition they involve, we have still a proportion of about 30 ulcers in every 100 left, quite unaccounted for. In other words, we have yet to determine the termination of nearly one-third of all the instances of this lesion."

In the *second part* of his treatise the author subjects the *symptoms* to a careful and accurate analysis. To render his statements as unbiased and reliable as possible, he has compared the results of his own extensive experience with the records of several hundreds of cases, verified by careful necropsy. His monograph thus contains a complete *résumé* of the present state of our knowledge on the semeiology of ulcer of the stomach.

In describing the different symptoms individually, Dr. Brinton dwells first upon *pain* as the most frequent and constant of all. The effect of pressure is, in his opinion, a "very important test." He demands, therefore, that in order to diagnosticate "ulcer," the seat and severity of the pain should be determined by applying pressure to the epigastrium, which generally will increase both the epigastric and spinal pain; instances in which the pain is diminished on pressure are very rare; that the time when the dorsal pain was first observed, as well as its situation, should be carefully noticed, and compared with those of the epigastric pain; that the influence of movements of the body, and of the decubitus upon the pain should be studied; Dr. Brinton found that in ulcer on the anterior surface of the stomach the pain is diminished by the supine decubitus, on the posterior surface by the prone; and finally, that the effect of various kinds of food upon the pain should be taken into consideration.

In spite of the very minute description of the different characteristics of this one symptom, we think that the author has been guilty of exaggeration of its value. Increase of epigastric and dorsal pain on pressure would indicate merely that the gastric mucous membrane is in an inflamed or otherwise irritated condition, and can, therefore, not be considered a characteristic sign of ulcer. That the pain of ulcer is frequently affected by changes in the state of abdominal innervation the author himself shows conclusively, by pointing out the connection between the pain and the menstrual molimen.

Vomiting, which forms the next symptom of gastric ulcer, exhibits far fewer peculiar characters than the pain. Whether the seat and size of the ulcer exercise any influence upon the frequency of this symptom could not be decided with any degree of satisfaction.

The next symptom the author subjects to his analysis is *hemorrhage.* If merely of capillary origin, this symptom is rarely discovered. In a third of the cases in which hæmatemesis and melæna is observed, the hemorrhage originates, according to the author's observation, from the larger vessels of the sub-mucous or subserous areolar tissue, or from those distributed to the liver, spleen, and pancreas. This hemorrhage may be so profuse as to distend quickly the stomach and intestines, and to produce death by syncope. Here again the author omits to point out that the symptom under consideration is by no means characteristic of ulcer of the stomach; even a profuse hemorrhage, accompanied by all the other symptoms of the disease, would not justify us in assuming the existence of an ulcer, unless all the other sources of gastric hemorrhage, as disease of the heart, cirrhosis of the liver, obstructions in the portal circulation, purpura, etc., could be excluded. Two other sources of gastric hemorrhage he enumerates under the head of ætiology of gastric ulcer; we refer to "ague" and "hemorrhagic erosions." Following the view of Rokitansky, most pathologists believe that these erosions, the cause of which is still unknown, merge into ulcer. Dr. Brinton opposes this view on the ground of post-mortem appearances, and of the different train of symptoms observed in the two diseases.

In proceeding in his analysis of the symptoms of ulcer, the author dwells at length upon one, observed frequently in cases of the disease in the female, viz.: *amenorrhœa.* Here he shows by his statistics, that menstruation is generally normal in cases of ulcer, and it is only after considerable hemorrhage from the ulcer that amenorrhœa sets in, and that the occurrence of so-called "vicarious menstruation," in the form of periodic hæmatemesis, is not at all positively proved. The case recorded by Cruveilhier is based solely on the testimony of the patient, given many years after it had been observed. On the other hand, he dwells upon the simultaneous occurrence of amenorrhœa and perforation, which is so frequently observed, and was first pointed out by Crisp, and tries to bring both in direct relation.

According to his statistical investigations of cases which ended fatally by perforation, in the female, the greatest number is observed among young girls who are not yet fully developed, are approaching, or have just passed the age of puberty, and suffer from anæmia, or scanty and irregular menstruation. This circumstance would naturally suggest the question, whether the amenorrhœa causes the ulcer, or the ulcer the amenorrhœa. The first part of this proposition the author answers in the negative, "not only because the ulcer is present in the male sex, and in the neuter monster, at the same age, as well as in the female at all other ages, but because in the female, at this epoch of life, the exceptions to the presence of the supposed cause are too numerous to be compatible with such a causation." He is in favor of an affirmative answer to the second part of the question, and the reasons he gives are perfectly tenable. The dyspeptic symptoms, which correspond with the establishment of the lesion, generally precede the deficiency or cessation of menstruation, and develope an anæmic condition, the usual attendant of all cachexias. Where, however, a cachexia is being developed, there the tonicity of the solid parts is already changed and lowered; and in the same measure in which the force and energy of these parts is diminished will not only their functions deviate from the normal standard, but also will the nutrition of the tissues be morbidly changed.

Although the usual results of a cachexia may be well known to us, its ultimate cause is not so obvious, since we are ignorant of the power which forms and maintains the tissues. Dr. Brinton is, therefore, perfectly right in maintaining, in his elaborate discussion on *the ætiology* of gastric ulcer, that there is nothing specific in this disease. He believes, on the contrary, that all the varieties that affect the form, progress, situation, numbers, and terminations of this lesion, find their parallel in the causation of the malady, which he refers to a certain cachectic condition of the system, the essential nature of which is as unknown to us as that of cachexias in general; in short, that we have no more right to speak of *the* ulcer of the stomach than of *the* ulcer of the leg, either of which lesions may commence in a great variety of ways, viz.: by ecchymosis, softening, a varicose vein, etc. He quotes Mr. Critchett's experience in reference to the character of the ordinary cutaneous ulcer, occurring at the epoch immediately following the access of puberty, and points out the analogy between it and the gastric ulcer at the same period, especially in regard to one peculiarity,—the more or less complete absence of inflammatory reaction at the base and margins. This process of *destructive absorption* is observed in another very striking instance, not mentioned by Dr. Brinton; we refer to the exfoliation and ulceration of the cornea following sometimes an unduly prolonged period of lactation, or originating spontaneously in the course of typhus, and of hydrocephalus. This marked example of ulceration occurring in a tissue in a primary manner, uncomplicated often with any other morbid action, is, according to the observations of Dr. Handfield Jones, always associated with states of debility, and is most benefited by a tonic and restorative treatment.

Under the head of *diagnosis*, Dr. Brinton lays down the following as the minimum of evidence that will justify our affirming the existence of an ulcer of the stomach during life: The pain must possess the characters attributed to it, must be accompanied by vomiting, and there must be evidence of hemorrhage having occurred in the course of the malady. He concedes, however, that in a large number of cases in which we may justifiably suspect the presence of an ulcer, some of these symptoms may be absent, in which event an absolute enforcement of the above rule of diagnosis might be the occasion of grievous errors in practice. In cases, for instance, of severe or protracted dyspepsia, associated with gastric pain, which is especially called forth by proteinous substances, or by hot liquids, and is affected by movement, rest, and posture,—particularly if such symptoms occur in connection with amenorrhœa in young females about the period of puberty,—Dr. Brinton deems it advisable that we should keep the possibility of gastric ulcer steadily in view; indeed, by treating such cases as ulcer of the stomach, we may often cure what we cannot diagnose. In regard to the diagnostic value of one of the symptoms enumerated above, gastric hemorrhage, it is to be mentioned, that its occurrence in a moderate form would not indicate invariably the existence of an ulcer, as it may take place without a "breach of continuity" in the gastric mucous membrane. Only in cases of more profuse hemorrhage in which the causes mentioned in an earlier part of our review could be excluded, could the existence of an ulcer be diagnosed with any degree of certainty.

In the *treatment* of gastric ulcer Dr. Brinton lays down the following indications: to remove all local obstacles to the cicatrization of the ulcer; to support the constitution in effecting this process; to remedy the results the lesion may have already brought about; and to limit or arrest some of the more prominent symptoms by which these results are usually betrayed.

To meet the first two indications, the author considers a strict regulation of diet of far greater importance than the exhibition of drugs, which he regards merely as adjuvants. The diet should consist at first of milk, given in small quantities, and at frequent intervals; if the irritability of the stomach is more moderate, farinaceous substances, the most suitable of which is arrow-root, may be added; and finally, as convalescence proceeds, animal diet may be cautiously tried. With reference to the last two indications, the author discusses the value and applicability of the different remedies usually employed for the purpose. He recommends especially, *opium* as a means of promoting the cure of ulceration, and justly praises its value in ulcers of long duration, of obstinate character, and in broken, exhausted constitutions, as it will not merely relieve pain, check great irritation or undue secretion of the mucous membrane, but will also support the strength, buoy up the nervous system, and check the waste or expenditure of the tissues generally. During convalescence the author urges the necessity of great caution in returning to the ordinary diet, as an excess at the table may suddenly bring back all the symptoms of the disease, even months after their disappearance. Patients should, therefore, for a long time after their recovery, take food only in small quantities; have this well prepared, not swallow it too hot, and only after thorough mastication.

The *appendix* to the treatise contains a series of reports, published originally in the "Association Journal." They are a selection from numerous cases of ulcer of the stomach, observed and described by the author in a very complete and accurate manner, and will be found, on perusal, to be very good illustrations of the more common and important varieties of the malady.

ART. V.—*Ventilation in American Dwellings; with a Series of Diagrams presenting Examples in Different Classes of Habitations.* By DAVID BOSWELL REID, M.D., F.R.S.E., etc. etc. To which is added *An Introductory Outline of the Progress of Improvement in Ventilation.* By ELISHA HARRIS, M.D., Late Physician-in-Chief to the New York Quarantine Hospital, etc. 8vo. pp. 124. New York: Wiley and Halsted, 1858.

As a nation, we have as yet made comparatively little progress in this important branch of hygiene; but our attention has been awakened to its great influence upon human health, by several eminent medical men of this country. More especially has this been effected by Dr. Reid, than whom no one has more thoroughly and practically investigated ventilation as adapted to the wants of all classes of society. Having resided among us two years, he has made ample use of his observations, and now presents us with the fruits of his labors, in the form of the most complete and systematic treatise that has yet appeared. Dr. Reid's experience has been large, and for the past few years he has been engaged in the introduction of his system in the largest houses of Great Britain and the Continent, as well as directing his attention to the ventilation of vessels. He can, therefore, speak *ex cathedra*, and we may fully rely upon the many suggestions contained in the work before us. It is to be hoped that architects and builders, for whom it is more especially intended, will read and re-read it, and fully digest its contents, and thus add more to our health and comfort. Many persons imagine that when they have a fine draught of air through their houses, the requisite object has been attained; but in this lies their mistake. Air may be fresh but not pure, and the first consideration of builders should be to make the proper arrangements for the free ingress and egress of pure air. This, moreover, should not be confined to the building, but the air without should be equally as pure, and special means should be employed for destroying the effluvia arising from sewers and marshes, which are in themselves rife sources of malarious diseases, cholera, and yellow fever. These points, as well as the ventilation of sick chambers, are carefully considered in Dr. Reid's work, which we can confidently recommend both to the professional and to the unprofessional reader.

ART. VI.—*A Treatise on the Practice of Medicine.* By GEORGE B. WOOD, M.D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania, etc. etc. Fifth edition. Two volumes, 8vo. pp. 888–904. Philadelphia: J. B. Lippincott & Co., 1858.

WE hail with pleasure the appearance of the fifth edition of the above work, which, under careful revisions and large additions, and the introduction of a few new subjects, embodies all the practical points that are necessary to bring it up to the present state of our knowledge upon all the topics discussed in its comprehensive scope. Going hand in hand with that of Dr. Watson, we do not hesitate to pronounce the treatise of Dr. Wood by far the most reliable and elaborate on the Practice of Medicine that has ever appeared in this country, and one which is equalled by few in any language. It is too well known to our readers to require any commendation at our hands; being referred to by every well-informed physician and student. The mere fact that the demand has called forth five editions in a little less than eleven years, and that the work has been used as a text-book in London and Edinburgh, is the highest praise that could be bestowed upon it. Dr. Wood is an accomplished writer, and an accurate delineator of disease, and has succeeded in acquiring a reputation as an author and a teacher which any man might envy.

ART. VII.—*A Manual of Practical Medicine.* By T. H. TANNER, M.D., Author of a Manual of Clinical Medicine and Physical Diagnosis, etc. etc. First American from the third revised and improved London edition. 12mo. pp. 398. Lindsay and Blakiston: Philadelphia, 1858.

GREATLY in contrast with the treatise of Dr. Wood is the unpretending manual of Dr. Tanner; and yet we must confess a great liking for all the little works of this author; for, although they are not intended for those more advanced in medical literature, yet they are of great utility to the student and to the practitioner who has not time to read, or will not read, the more elaborate treatises on practical medicine. We do not like the author's classification of the varieties of cancer, nor his description of keloid; but on the whole, without any waste of words or of space, his delineations of the pathology and treatment of disease are good, and his style is easy, straight-forward, and to the point. We should have wished the compass of the work to be somewhat more extended; for it is rather too much of a compendium, and here and there we find that whilst too much space is devoted to one disease, too little is given to another. The manuals of Dr. Tanner are rather better than we generally find them; and, although they lay no claim to originality, it is easy to see that the author is thoroughly conversant with the subjects he discusses. The appendix of formulæ alone occupies sixty-two pages; too much room when contrasted with the rest of the work. It would, in our opinion, have been better to have omitted them altogether, and to have filled up the space with more extended descriptions of diseases.

ART. VIII.—*The Physician's Visiting List, Diary, and Book of Engagements, for* 1859. Lindsay and Blakiston: Philadelphia.

WE have received from the publishers this convenient little pocket-book, and would recommend it to every physician, although it is unnecessary, as it is already so well known to the profession. In addition to the usual contents, the "Marshall Hall ready method in Asphyxia" finds a place in this edition.

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Original Communications.

ART I.—*Observations on the Deaf and Dumb.*—By RICHARD J. DUNGLISON, M.D., of Philadelphia.

THERE are numerous subjects of deep interest, connected with the study of medicine, which are overlooked by a large majority of the profession or are passed by as undeserving of any special notice. It is to be regretted that medical men have at all times been so intently occupied in the search after curative agents, with which to combat disease, that they have failed to pay that attention to collateral subjects which they so well merit. Defeated, at times, in the acquisition of the knowledge which they covet, they have neglected to study the malady which they have found incurable; and, in the belief that no practical good could result to mankind from a continued investigation of such affections, they have often left the unfortunate sufferers to the merciful care of the few who might have more charitable views in regard to them.

It would be unjust to the present enlightened generation to charge upon them the possession of such sentiments to as great an extent as their predecessors; and yet we cannot close our eyes to the fact, that the attainment of a practical education excludes, too often, any thought of subjects which should awaken the liveliest sympathies of the physician. Why is it that medical literature has so long been deficient in works upon the deaf and dumb; and why have facts of statistical or social interest, bearing upon the subject, been so rarely supplied to the profession and the world? It cannot be supposed that it was due to the existence of a smaller proportionate number of that class formerly than exists at the present day; for the rate of increase or diminution is so insignificant for a series of years, that, on some points, we can speak of the past with almost as much certainty as the present. In regard to the medical men of days past, may we not rather assign as a sufficient cause for the absence of any satisfactory information in regard to deaf-mutes, the consciousness of an utter ignorance of all means tending to their relief?

The objection urged at times against the study of special diseases weighs but little as compared with the importance of acquiring and disseminating information upon subjects of such vital consequence as we find embraced in the too often incurable affections of the senses. Devolving, as it does, upon the medical profession to diffuse information upon points of anthropology, which cannot be generally known except by study, and careful, thorough examination of medical facts and reasonings, how necessary must it be that all the data that can be collected should be arranged in some tangible form, and all the general laws upon special subjects should be classified!

We are now, so to speak, only at the commencement of the task; we see the errors of past records or statistics; we endeavor to sift out from the confused mass that which may be serviceable as a foundation on which to base our present and future investigations; and we look forward to the confirmation or destruction of our present deductions according as future observations may influence them.

If it were asked which form of deprivation of the organs of sense has the most claim upon our attention and sympathy, it would be difficult to decide. The deaf-dumb and the blind present two distinct classes, affording many points of interest as regards their influence upon society, and the reactions of social influences upon them; and both seem to be governed throughout the world by general laws. The present article includes only the consideration of that class of human beings who, born with the infirmity existing, from causes whose nature we shall hereafter examine, or acquiring it at a subsequent period, suffer from the deprivation of two important means of communication with the external world, viz. the faculties of audition and speech.

It is a remarkable fact that accurate statistics of the deaf and dumb are, even now, not easily attainable; few comprehensive works have been issued that embrace the full details of the past and present condition of this interesting class of unfortunates,—their proportionate numbers in different countries, and the history of their various modes of instruction. It is true that the annual reports of institutions sometimes contain valuable information; but, in a large number of cases, too much space is given to details affecting merely local interests, and too little to topics of universal consequence. The task, therefore, of collecting, from so many different channels, information that may be of practical value, is by no means easy; and much labor is required to sift out points of real importance from the mass of materials presented.

Even those works which have devoted the most attention to the subject, and have exhibited evidences of profound research and a desire to do the matter full justice, have, for reasons which will be hereafter referred to, fallen short of their object, and failed to convey an accurate statistical estimate of the actual condition of the deaf and dumb. This is to be regretted, not only because it impairs the value of investigations undertaken in the most laudable spirit of philanthropic inquiry, but also exerts an influence at the present day, in partially paralyzing our attempts at the formation of comparative tables of the past and present. Yet, in spite of difficulties, the multitudes of scattered facts are being classified, general laws are deduced from reliable data, and more and more careful regard will doubtless be paid to the proper method of forming accurate statistical tables.

There are many points in connection with an enumeration of the deaf and dumb, and, indeed, in censuses of all descriptions, which, although viewed often as matters of secondary importance by those who scan only the ordinary details of population, etc., are to the medical profession subjects of eminent moment. The influence of sex, of race, and of locality, in predisposing to various maladies, is deducible from careful comparisons of statistical tables, furnished from various sources and at different periods. Several of these points are not often fully discussed, and to them I desire to draw some attention in the course of the present article. Those on which I would wish particularly to dwell are—

1. The apparently greater prevalence of deaf-mutism in countries which have mountainous ranges, and the small ratio of the deaf and dumb to the population in low countries.

2. The influence of race in predisposing to deaf-mutism, as exemplified in our own country more particularly.

3. The duration of life among the deaf and dumb, and the age of greater prevalence of deaf-mutism.

4. Deaf-dumbness in the United States, and institutions for the instruction of deaf-mutes.

5. An estimate of the number of the deaf and dumb in the known world.

But, before entering upon any of these points, it is worthy of note, as an evidence of the existence of a general law governing, so far as we know, a great portion of the human family, that there is little or no variation in the proportionate numbers of deaf-mutes in the same locality, even in large tracts of country, during successive periods of time. This rule does not apply alone to the class under consideration; it seems to be applicable to varied conditions of health and disease in all parts of the globe. Yet it yields, at times, to the ravages of desolating epidemics, which seem to put all human laws at defiance, bringing in their train consequences that frequently produce a most marked increase in the ratio of the deaf and dumb or blind to the general population. The influence of epidemic malignant scarlatina, as an agent of this class, will be referred to in the consideration of the causes of acquired deaf-dumbness.

1. That there is a greater aggregate of deaf-mutism in mountainous regions seems, as a general rule, to be established by statistical returns from almost all countries in which statements of the condition of the deaf and dumb have been published. It is remarkable that the same causes, which appear to be at work in certain localities to produce idiocy, are, apparently, active as predisposing agents in the propagation of deaf-mutism. And yet we must confess our utter ignorance of any precise connection between them. These effects manifestly, however, evince the existence of similar local causes of arrest of development. Yet the number of blind in the same localities is not above the ordinary average. Are there influences that affect the one set of organs and not the other; and, if so, what do we know of the atmospheric phenomena, or of the special geographical nature of the country, or, indeed, peculiarities of any kind that will rationally solve the question?

These are problems not easily explained, requiring a prolonged examination of facts, and an intimate knowledge of localities; a combination of requisites for the task, which may some day enlighten us in regard to certain of the predisposing and exciting causes of deaf-mutism. But, at present, we are very much in the dark; we know that such influences are productive of such results, and yet we have failed thus far satisfactorily to account for them. To show that there is strong ground for our belief that locality has a claim upon our attention, as one of the causes of deaf-mutism, statistical returns from the various countries of Europe may be referred to with advantage. One of the latest published statements gives the average proportion of deaf-mutes to the population in Europe as 1 : 1593, or about one in every 1600 inhabitants.

Switzerland is a remarkable exemplification of the prevalence of deaf-dumbness in certain localities. It is here, as is well known, that cretinism, that scourge of certain districts of the Swiss country, prevails so extensively; and in those regions which suffer the most from its ravages deaf-mutism is of very common occurrence. It would be interesting to know—and future statisticians may throw light upon the subject—whether cretinism and deaf-dumbness are often met with in the same individual, and whether the one is of much more frequent occurrence than the other. Returns from several of the Cantons, taken about thirty years ago, give the following result:—

Population of five Cantons	895,000
Number of deaf-mutes	1777
Proportion to population	1 in 503

Later and more reliable statements give even a greater proportion than this; for we learn from tables prepared within the past few years, in regard to the population, etc. of the mountain passes of Switzerland, that the proportion is often as great as one in 206.

More striking facts than these, however, are contained in the "*Journal de l'Instruction des Sourds-Muets,*" in regard to the Canton of Vaud. In sixty-seven parishes there is said to be not a single deaf-mute; while in the remaining fifty-five there are as many as 152, or a proportion of one to every 100 of the population. What may be the cause that opposes the prevalence of deaf-dumbness in the former, it is impossible to say; but in the latter we have people living in deep valleys, surrounded on almost every side by mountains, and with a difficulty of access from neighboring parishes or Cantons, that might be sufficient cause for marriages of consanguinity to be of frequent occurrence.

The English census furnishes information from the various countries of Great Britain, viz., England, Scotland, and Wales; the Irish census being a separate feature, and much more accurate than the English. Little regard had been paid to statistics of the deaf and dumb in these countries, until a general desire for exact information stimulated the proper authorities to make inquiries on the subject, the results of which are comprised in the census of 1851. We can now, therefore, speak from actual and comparative facts, instead of conjectural statements founded on the numerical estimates of other countries. Here we find the greatest prevalence of deaf-mutism in the Northern counties of Scotland, a district of country remarkable for its mountainous ranges, and whose valleys even are far above the level of the Southern lowlands. There seems to be an exception to our rule in the Northern counties of England, for there the proportionate number of deaf-mutes is small. Cumberland, for example, one of the most mountainous districts of England, has a proportion of one to 1916 of its inhabitants, which is far less than its mountainous aspect might induce us to suppose. The test, however, is so satisfactory for almost all the counties of Great Britain, that we cannot but imagine that some local causes, of the exact nature of which we are ignorant, may operate against it in Westmoreland and Cumberland.

In Ireland we find a proportion of one to every 1380 of the population. Sources of error have been pointed out by one of the Commissioners of the Census, (Mr. Wilde,) and he is disposed to infer that the ratio really is about one to 1579, a proportion which corresponds very closely with that of Europe generally, and may be a reliable basis for our calculations. The point of interest, however, is in regard to the physical appearance of the country; and in this Ireland is not an exception to the general rule, the inhabitants of counties which present mountain ranges being, almost without exception, more affected with deaf-dumbness. In the open country, where the surface is level, the proportion is sometimes as small as one in 2000; but in hilly situations, such as Limerick and Tipperary, it is as much as one in 1300; and in Wicklow, which is one of the most mountainous counties in Ireland, one in 1192.

The number of deaf-mutes in the Alpine and Carpathian parts of the Austrian Empire, which are the most mountainous districts of the Empire, is known to be greater than in other portions. But satisfactory data are wanting for more detailed remarks upon this subject.

If deaf-mutism is more prevalent in portions of country characterized by a marked elevation of surface, the reverse of this proposition should also be true, and we should expect to find countries whose physical aspect is entirely different more free from the privation than those previously mentioned. That this is the case is exhibited by the following facts. Belgium has a proportion of one in 2291; Saxony, one in 2180; Denmark, one in 1942; Holland, one in 2000. From sources where means of information are scanty, we cannot expect to throw much light upon this question; but if the test should apply with equal force to all countries, we should naturally infer that Italy and Turkey must be countries where deaf-dumbness is more prevalent, while Russia in Europe must be comparatively exempt. The countries of Asia, and especially the Chinese

Empire and Asiatic Russia, would be interesting subjects of study in this connection, on account of their numerous and lofty mountain-chains.

Perhaps in warm countries the ratio may be less than in those that are bleak and cheerless; and this may account for occasional paucity of deaf-mute population in mountainous regions; but of this we have not as yet sufficient facts to establish any positive speculations. More statistical returns, indeed, are needed to confirm the apparent coincidences of which we have spoken, and a more thorough knowledge of local phenomena than we at present possess. If any theory is to be deduced from the facts we have furnished from geographical sources, it can scarcely receive any decided confirmation until deaf-mute statistics are more perfectly recorded.

2. That *race* governs, to a certain extent, the distribution of the deaf and dumb, is exhibited in our own census-tables, more especially. We have scarcely any other means, indeed, of gaining knowledge upon this point, the contrast furnished by the white and colored population being very great, and information from other sources being deficient. Could we obtain statistics in the native country of the genuine African, we might discover by reliable data whether race alone operated, or whether locality and race combined to produce certain results We have no census of the Chinese population, nor of any of the Asiatic countries.

The colored race, it is satisfactorily shown, is less disposed to deaf-mutism than the white. The following table exhibits substantial grounds for the truth of this assertion:—

INFLUENCE OF RACE.

(*U. S. Census*, 1850.)

	1830.	1840.	1850.
Number of white deaf-mutes . .	5363	6684	9136
" " free colored " " " slave " . .	743	981	136 531
White population . . .	10,537,378	14,195,695	19,553,068
Free col'd " Slave "	2,328,642	2,873,758	434,495 3,204,313
Proportion of white deaf-mutes to white population . . .	1 : 1964	1 : 2123	1 : 2140
Proportion of free colored to free colored population . . . " " slave " slave "	1 : 3134	1 : 2929	1 : 3194 1 : 6034

3. In regard to the *duration of life* of the deaf and dumb, and the age of greatest prevalence of deaf-dumbness, our census-tables are remarkably deficient, and we are compelled to cite results obtained in other countries; England, for example.

The numbers of the deaf-mute population are greatest between the ages of five and twenty-five; and as the age advances the numbers diminish. With the blind it is different; the proportions go on increasing from infancy to old age, and very rapidly in the latter years of life. Cases of blindness are comparatively rare at birth; and we know that causes very frequently operate in old age to produce blindness. Deaf-dumbness, on the other hand, is either congenital, or, as often happens, it is acquired as a sequence of those terrible visitations of malignant disease, from which young children suffer so disastrously.

In England and Wales the proportions of deaf-dumb and blind to the general population at particular ages are furnished in the following table:

In every 100,000 of the population there are—

Years of age.	Deaf-Mutes.	Blind.
0	42	40
5	159	59
10	167	73
15	132	90
25	115	107
35	107	163
45	100	280
55	98	515
65	89	1177
75	93	2556
85 and upwards,	58	5672

In regard to the comparative duration of life in the deaf and dumb and the blind, the same census gives this result:—

Of 12,553 deaf-mutes in Great Britain in 1851, only 783, or $6\frac{1}{5}$ per cent., arrived at the age of sixty.

Of 21,487 blind, 10,102, or 47 per cent., were at ages ranging from sixty upwards.

In this country we have a "Table of the Ages of White and Free Colored, Deaf and Dumb and Blind, in ten States in 1850," from which we glean the numbers of each class seventy years of age and upwards.

States.	Deaf-mutes.	Blind.
Virginia,	11	165
Vermont,	2	43
S. Carolina,	1	45
Louisiana,	3	11
Tennessee,	3	100
Arkansas,	—	11
Ohio,	8	140
Michigan,	2	21
Wisconsin,	1	7
Iowa,	—	7

In the States above-mentioned, there were—

	Deaf-mutes.	Blind.
Under ten years of age	481	173
Ten, and under thirty	1343	585
Thirty, " seventy	681	917
Seventy, and upwards	31	550

If this be an accurate table, the number of deaf-mutes, at ages ranging from seventy years and upwards, is about one forty-third as great as between the ages of ten and thirty; while with the blind, the number is much the same at both periods.

4. The following table exhibits the number of deaf and dumb in each State of the Union, and their proportion to the general population. We have already seen that the colored race is less disposed to deaf-dumbness than the white, but no distinction is made in the table, the aggregate deaf-mute population in each State being taken into consideration.

Table exhibiting the Aggregate Deaf and Dumb Population of the United States. (*Census* 1850.)

State.		Deaf-Mute Population.	Population.	Proportion to Population.
Alabama,		210	426,514	1 : 2031
Arkansas,		84	162,189	1 : 1930
California,		7	91,635	1 : 13,090
Columbia, D. of		19	37,941	1 : 1996
Connecticut,		404	363,099	1 : 898
Delaware,		54	71,169	1 : 1317
Florida,		24	47,203	1 : 1966
Georgia,		266	521,572	1 : 1960
Illinois,		356	846,034	1 : 2376
Indiana,		537	977,154	1 : 1819
Iowa,		59	191,881	1 : 3252
Kentucky,		563	761,413	1 : 1352
Louisiana,		117	255,491	1 : 2183
Maine,		266	581,813	1 : 2187
Maryland,		261	417,943	1 : 1601
Massachusetts,		358	985,450	1 : 2696
Michigan,		125	395,071	1 : 3160
Mississippi,		107	295,718	1 : 2763
Missouri,		282	592,004	1 : 2099
New Hampshire,		162	317,456	1 : 1959
New Jersey,		189	465,509	1 : 2463
New York,		1263	3,048,325	1 : 2413
North Carolina,		471	553,028	1 : 1174
Ohio,		915	1,955,050	1 : 2136
Pennsylvania,		1145	2,258,160	1 : 1972
Rhode Island,		65	143,875	1 : 2212
South Carolina,		165	274,563	1 : 1664
Tennessee,		377	756,836	1 : 2007
Texas,		59	154,034	1 : 2610
Vermont,		148	313,402	1 : 2117
Virginia,		642	894,800	1 : 1393
Wisconsin,		69	304,756	1 : 4416
Minnesota,	Territories.	——	6,038	——
New Mexico,		34	61,525	1 : 1809
Oregon,		——	13,087	——
Utah,		——	11,330	——
Total.		9803	23,191,876	1 : 2365

Dr. Harvey P. Peet, of the New York Institution for the Instruction of the Deaf and Dumb, has arranged the census of deaf-mutes, according to geographical divisions, so as to exhibit the relative proportions of white deaf-mutes to the white population.

New England States	1 in 1799
Four Middle States	1 in 2125
Six N.W. States—Ohio, Indiana, Illinois, Iowa, Michigan, Wisconsin	1 in 2160
Five Southern States—Maryland, Virginia, North Carolina, South Carolina, Georgia, and D.C.	1 in 1821
Eight S.W. States—Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, Kentucky, Missouri	1 in 2220
Texas and New Mexico	1 in 2800

The census returns show a greater amount of deaf-mutism among the native than among the foreign population. But there are several points to be taken into consideration, that may partially explain this. We do not know what proportion were born deaf and dumb, or how many became so in the district in which they were registered; nor do we know how many emigrated into the district who were at the time confirmed deaf-mutes. The following table, prepared also by the Principal of the N. Y. Institution, (Dr. Peet,) who is one of the most enlightened workers in the cause in which he has been so long engaged, exhibits the relative proportions among the foreign and native population, including white and free colored, but excluding slaves:—

Proportion of Deaf-Mutes in the Native and Foreign Population.

States.	Native Population.	Native Deaf-Mutes.	Proportion to Population.	Foreign Population.	Foreign Deaf-Mutes.	Proportion to Foreign Population.
New England,	2.423.223	1266	1 : 1914	299,340	66	1 : 4535
New York,	2,439,296	1168	1 : 2088	651,801	129	1 : 5053
New Jersey,	430.441	191	1 : 2253	58,364	12	1 : 4862
Pennsylvania,	2,014,619	908	1 : 2218	294,871	96	1 : 3071
Seven N.W. States,	4,656,158	2207	1 : 2110	638,784	195	1 : 3276
Slave States N. of 35°	3,642,248	2084	1 : 1748	119,730	23	1 : 5206
" " S. " "	1,892,565	714	1 : 2650	113,109	17	1 : 6653
Total,	17,498,550	8538	1 : 2049	2,175,999	538	1 : 4044

The subject of deaf-dumbness in the United States naturally suggests an inquiry into the past and present history of institutions charitably devoted to the instruction and care of those suffering from the deprivation. It is unnecessary to dwell upon details of modes of instruction, or to sketch at any length the rise and progress of deaf and dumb asylums; although it may be interesting to show how the benevolent wishes of the founders of deaf-mute instruction in this country have been satisfactorily accomplished, and how greatly the number of institutions has augmented since that time.

A father's solicitude for the welfare of his daughter, who had been deprived of the faculties of hearing and speaking by a violent attack of epidemic fever, then raging in Hartford, Connecticut, led to the establishment of the first school for the instruction of deaf-mutes in America, in the year 1817. In the previous year, legislative aid had been given in furtherance of such an object, and this is the first example of a benevolent legislative interposition in behalf of this afflicted class in America. To Gallaudet, under whose fostering care the institution increased rapidly in numbers and usefulness, is due the credit of founding in the United States a system which is now universally adopted throughout the country, and which has contributed so much to the amelioration of the condition of the deaf and dumb.

Other States rapidly followed the example thus set by the State of Connecticut; and twenty-one institutions have been founded in the following States, viz. :—Connecticut, New York, Pennsylvania, Kentucky, Ohio, Virginia, Indiana, North Carolina, Tennessee, Illinois, Georgia, South Carolina, Missouri, Wisconsin, Louisiana, Michigan, Iowa, Mississippi, Texas, District of Columbia, and Alabama.

From the latest sources of information in our possession, the condition of such institutions may be tabulated as follows :—

Deaf and Dumb Institutions in the United States.

	Institution.	Location.	Date of Opening.	No. of Pupils.	According to Report for Year.
1	Connecticut,	Hartford,	1817	252	1857
2	New York,	New York,	1818	302	1857
3	Pennsylvania,	Philadelphia,	1820	174	1857
4	Kentucky,	Danville,	1823	75	1857
5	Ohio,	Columbus,	1829	157	1857
6	Virginia,	Staunton,	1839	71	1854–5
7	Indiana,	Indianapolis,	1844	160	1857
8	North Carolina,	Raleigh,	1845	45	1850
9	Tennessee,	Knoxville,	1845	80	1856–7
10	Illinois,	Jacksonville,	1846	115	1856
11	Georgia,	Cave Spring,	1846	45	1856
12	South Carolina,	Cedar Spring,	1849	21	1856
13	Missouri,	Fulton,	1851	84	1856
14	Wisconsin,	Delavan,	1852	57	1857
15	Louisiana,	Baton Rouge,	1852	40	1856
16	Michigan,	Flint,	1854	57	1857
17	Iowa,	Iowa City,	1855	50	1857
18	Mississippi,	Jackson,	1856	21	1857
19	Texas,	Austin,	1857	11	1857
20	District of Columbia,	Washington,	1857	—	——
21	Alabama,*				

* Suspended in 1854–5.

5. Europe took the initiatory steps in the education of deaf-mutes nearly a century ago. In the year 1760, through the benevolent exertions of the Abbé de l'Epée, who may be considered the founder of institutions for the deaf and dumb, a school was organized in Paris, which for thirty years remained a private establishment. In 1791 the royal patronage of Louis XVI. was bestowed upon it, and it became a national Institution, under the care of the Abbé Sicard, who had received the advantages of L'Epée's able instruction, and who had been occupied as the presiding officer of an institution at Bordeaux previously to his removal to Paris.

The second school in Europe was established in Edinburgh, in 1764, by Braidwood. Then followed asylums in Leipzic, Bordeaux, London, etc., and their number rapidly increased, until, at the present day, we find them in almost all the European countries.

The following table gives all the information it has been practicable to obtain in regard to the past or present condition of those institutions. It is necessarily imperfect from the want of the proper materials for its compilation. It is modified from statistics in the N. Y. Report for 1851, as copied into the Report of the Kentucky Institution; later returns having been introduced to bring the table as much as possible up to recent times.

Country.	No. of Institutions.	No. of Pupils.	Date of Information.	Location.
Austria,	11	643	1851	Vienna, Lintz, Brunn, Prague, Waitzen, Lemberg, Gratz, Halle, Gorz, Milan, Pressburg.
Bavaria,	10	200	1835–38	Munich, Bayreuth, Bamberg, Anspach, Wurtzburg, Nuremberg, Frankenthal, Dillengen, Straubing, Altdorf.
Belgium and Holland,	14	539	1844–56	Brussels, Ghent, Liege, Bruges, Mooreslade, Mons, Tournay, Namur, Maesyck, Antwerp, Groningen, Herlaar.
Denmark, Sweden, and Norway,	5	296	1839–44	Copenhagen, Schleswig, Stockholm, Drontheim, Christiania.
France,	44	1542	1846–56	Paris, Bordeaux, Marseilles, Toulouse, Albi, Le Puy, St. Etienne, Lyons, Grenoble, Vizille, Bourg, Sisteron, Clermont-Ferrand, Chaumont, Rodez, Aurillac, Poitiers, Loudun, Pont-Achard, Nantes, Auray, Laval, Angers,

Country.	No. of Institutions.	No. of Pupils.	Date of Information.	Location.
				Nogent-le-Rotrou, Lamballe, Caen, Rouen, Besançon, Orleans, Strasburg, Nancy, St. Medard-les-Soiss, Arras, Lille, Vericelle, Villedieu, Pont l'Abbé.
German Free Cities,	4	42	1844	Frankfort, Hamburg, Bremen, Lubeck.
Great Britain and Ireland,	23	1593	1851–56	London, Birmingham, Manchester, Doncaster, Liverpool, Bristol, Exeter, Newcastle, Rugby, Bath, Brighton, Edinburgh, Glasgow, Dundee, Aberdeen, Dublin, Belfast, Cork, Swansea.
Italy,	11	379	1834–51	Rome, Naples, Sienna, Genoa, Turin, Modena, Milan, Villanuova, Verona, Ferrara, Bologna.
Prussia,	25	853	1855	Berlin, Stettin, Stralsund, Konigsberg, Angerburg, Marienburg, Posen, Breslau, Leignitz, Ratibor, Weissenfels, Erfurt, Halberstadt, Soest, Buren, Cologne, Moers, Kempten, Langenhorst, Halle, Aix-la-Chapelle, Braunsberg, Petershagen, Bruhl, Neuwied.
Russia and Poland,	3	163	1838–50	St. Petersburg, Warsaw, Odessa.
Saxony, Hanover, and rest of Germany,	18	500	1838–48	Leipzig, Dresden, Hildesheim, Weimar, Eisnach, Freiberg, Bansheim, Homberg, Camberg, Bruchoof, Brunswick, Wildeshausen, Habstahl, Emden, Altenburg, Coburg, Ilsfeld, Klausthal.
Spain and Portugal,	3			
Switzerland,	10	256	——	Geneva, Iverdon, Brunnader, Frienisburg, Einsiedelm, Zurich, Werden-Stein, Zofingen, Aarau, Riehen.
Wurtemberg and Baden,	6	191	1844	Gmund, Esslingen, Viennden, Tubingen, Wilhelmsdorf, Pfortsheim.

The total number of European institutions given above is 187, with 7197 pupils. If it was possible to obtain more precise information in regard to these countries, the following general estimate would doubtless be found to be nearer the truth:—

Total number of European institutions - - -	220
" " " Pupils - - - - -	10,000

Add to these the United States institutions, 20 or more in number, with nearly 2000 pupils, and a few scattered establishments elsewhere, and we shall find that there are at least 250 institutions in the world devoted to the same charitable purposes, and having under their care 14,000 or 15,000 pupils.

A probable estimate of the number of deaf and dumb in Europe is here given, prepared with a careful regard to accuracy, and based upon the most reliable statistical returns from most of the countries mentioned.

Estimate of the Deaf-Mute Population of Europe.

Country.	Population.	Number of Deaf-Mutes.	Proportion to Population.	Date of Enumeration of Population.
Austria,	38,088,400	24.030	1 : 1585	1852
Bavaria,	4,559,452	2922	1 : 1560	1852
Belgium,	4,426,202	1931	1 : 2291	1850
Brunswick,	271.208	192	1 : 1412	1852
Church, States of,	3.006.771	1897	1 : 1585	1850
Denmark,	2.296,597	1182	1 : 1942	1850
France,	35,783,170	29,512	1 : 1212	1852
Germany, (except larger States,)	6.088.737	3928	1 : 1550	1850–2
Great Britain,	21,121,967	12.553	1 : 1682	1851
Greece,	1,002,112	625	1 : 1600	1852
Hanover,	1,819,253	1230	1 : 1479	1852
Holland,	3.962.290	1981	1 : 2000	1853
Ionian Islands,	230,000	150	1 : 1600	1852
Ireland,	6,553,210	4151	1 : 1579	1851
Modena,	586,458	390	1 : 1500	1850
Naples, (including Sicily,)	8.704,472	5440	1 : 1600	1851
Norway,	1,328,271	1328	1 : 1000	1845
Parma,	507,881	317	1 : 1600	1853
Portugal,	3,471,203	2190	1 : 1585	1850
Prussia,	16,935.420	12,630	1 : 1340	1852
Russia,	60,098,812	37,917	1 : 1585	1851
Sardinia,	5,090,245	7272	1 : 700	1852
Saxony,	1,987,832	911	1 : 2180	1852
Spain,	13,936,218	8792	1 : 1585	1849
Sweden,	3,482.541	2279	1 : 1528	1850
Switzerland,	2,390,116	4751	1 : 503	1850
Turkey,	15,500,000	9687	1 : 1600	1844
Tuscany,	1,778,021	819	1 : 2171	1852
Wurtemberg,	1,733.263	1240	1 : 1400	1852
Total for Europe,	266,740,122	181.077	1 : 1473	. . . .

Of many parts of Continental Europe, and especially of the semi-civilized or barbarous countries of Asia and Africa, our information must necessarily be defective, no census of deaf-mutes having been taken at all, or, at any rate, not for many years, although we may have independent censuses of the general population. In such cases ratios furnished by former statistical tables have contributed to our present estimate of the number of deaf-mutes in a few of the countries .named, and the proportion of deaf and dumb to the population in contiguous countries similarly situated has served for a guide in a small number of cases.

Tables have been published to show the proportion of deaf-mutes to the population of Europe, and these are, doubtless, not very far from the truth. Our own estimate corresponds very closely with that of Dr. Schmalz, of Dresden, who, in a statistical work upon this class, places the number of deaf and dumb at 145,131 in a general population of 214,000,000, a proportion of 1 in 1474. Another estimate by Dr. Lachman exhibits a greater amount of deaf-dumbness in Europe than we are induced to believe can probably exist, the proportion fixed upon by him being 1 in 1356. The difficulty of deciding, until each country establishes some means of obtaining authentic information, is very great, and conjecture must, in the mean time, supply what is at present inaccessible in any other way.

So also in regard to countries in which no census has ever been taken we must wait for the future to furnish the proper materials for comparison, unless, by conjectural estimates, we supply the deficiency. It is difficult to form a correct idea of the total deaf-mute population of the world, but the following summary may be an approximation :—

Estimate of the Deaf-Mute Population of the World.

	Population.	Deaf-Mutes.
Europe - - - - - -	266,740,122	181,077
United States - - - - -	23,191,876	9803
North America South America - - - -	35,000,000	20,000
Asia, Africa, etc. - - - -	600,000,000	375,000
	924,931,998	585,880

There are probably 600,000 deaf-mutes in the various countries of the world, or 1 in every 1550 or 1600 of the population.

The difficulty of deciding in early life whether a child is a deaf-mute will always be an insurmountable obstacle to a satisfactory estimate of the number of deaf-mutes in earliest infancy; but this is not the only difficulty. In cases of deafness uncomplicated with dumbness, of insanity or idiocy combined with deaf-mutism, and of dumbness unassociated with deafness, the ignorant and unscientific collector of statistics distributes the cases as he thinks fit, without any regard to the importance of minute details. Perhaps the same confusion may exist in some States from carelessness in regard to the separation of the statistics of the white population from the colored. So much doubt was entertained in regard to the censuses of 1830 and 1840 that a memorial was sent to Congress protesting against their publication. Assuming, however, that this is not a very serious source of error, can it be possible that a country like England has, in proportion to her population, so many more deaf-mutes than the United States? The ratio in Great Britain is 1 : 1670, while our own ratio of white deaf-mutes is 1 : 2140.

Perhaps the most interesting questions connected with deaf-dumbness are those which relate to the *causes* operating to produce it, whether such cases be congenital or acquired subsequently to birth; and the proportion existing between the two classes. These are subjects that have long excited attention with the philanthropist, and must always possess profound interest with the medical philosopher.

I. *The Causes of Congenital Cases* are family predisposition in some, marriages of consanguinity in others, and in others again, the influence of locality.

1. *Family Predisposition.*—Several instances of a curious and interesting nature in favor of the transmission of the infirmity through families are furnished by Mr. Wilde* from personal observation in Ireland. He gives an instance in the County of Cavan of the transmission of the disease, in direct descent, for three generations, the grandfather, the father, and four of the present family being all deaf and dumb. In the County of Limerick was found a mute with five paternal first cousins, and also a maternal second and a third cousin, all deaf and dumb. In the case of a mute individual in the County of Down, two grandaunts, two granduncles, and two cousins, on the mother's side, were mute. In one, in the County of Leitrim, two granduncles, and an uncle and aunt, by the father's side, were mute; and in Belfast was found a mute who had an uncle and aunt on the father's side, and an uncle and aunt on the mother's side, all deaf and dumb. In the County of Kerry two mute children in the same family had a grandaunt, an aunt, and a cousin, by the mother's side, deaf and dumb; and in the County of Fermanagh, where two mute children occurred in the same family, their three grandaunts and a granduncle, by the father's side, had been deaf and dumb. "*Uncles, aunts,*

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* Wilde, William R., Practical Observations on Aural Surgery and the Nature and Treatment of Diseases of the Ear. Philadelphia, 1853. Appendix. Deaf-Dumbness, p. 444.

and cousins, are the relatives of existing mutes who have most frequently exhibited the same disease."

The Irish census also furnishes 281 cases exhibiting the result of family predisposition or peculiarity in the production of congenital mutism, or of persons born in families, some of the previous members or collateral branches of which were mute, the disease being transmitted by the father's side in 149 cases, and by the mother's in 132. In five instances the grandfather was deaf and dumb; in three, the grandmother; in eighteen, the granduncles; in eleven, the grandaunts; in three, the father; in one, the mother; in forty-six, the *uncles;* in twenty, the *aunts;* and in 176, the *cousins*, had been deaf and dumb.

The report of the Hartford Institution for 1857 conveys additional evidence of the same kind. In a general summary of the causes, etc., of acquired deaf-mutism in all the pupils that had ever received the advantages of instruction in that school there are the following items in regard to deaf-mutes and their relatives:—thirteen pupils in five different families had one deaf and dumb parent; ten had both parents deaf and dumb in five different families; two had a deaf and dumb mother and grandfather; one had a deaf and dumb father and grandfather; one had deaf and dumb parents and a grandfather; one had a deaf and dumb great-grandfather; three married couples have each one deaf and dumb child; three couples have three deaf and dumb children each; one couple have two deaf and dumb children; one deaf and dumb husband with a hearing wife had three deaf and dumb children; one deaf and dumb wife with a hearing husband has one such child; twelve have each an uncle or aunt deaf and dumb; one has one uncle and one aunt; one has two uncles deaf and dumb; twenty-one have each one deaf and dumb cousin; six have two cousins; three have each three cousins; three have each four cousins; one has five cousins; one has six cousins; twelve have each one relative more remote than cousin; five have two; three have three; three have four; one has five; one has six; one has eleven; and one has fourteen such relatives.

Interesting facts of the same kind are furnished by Dr. Peet in the valuable report of the New York Institution for 1853. Cases are cited by him which bear conclusive testimony to the tendency of deaf-mutism to be diffused in families. "In Kentucky there is a family in which there are fourteen deaf-mutes, viz.: a father and eight children, (six males and two females,) all mutes; a father, mother, and child, (female,) all mutes, and two cousins." A summary of cases of direct inheritance from one or both parents, affords satisfactory evidence that deaf-dumbness may occur in this way, although such cases must be rare.

Cases are given by Dr. Peet of a deaf-mute son of a deaf-mute father, a deaf-mute son of a deaf-mute mother, and a deaf-mute daughter of a deaf-mute mother; and in summing up the various accounts of family predisposition in different countries, he remarks: "If these are all the cases that exist in countries in which inquiries have been made, it will follow that not one in a thousand of the deaf and dumb inherited their misfortune from a parent or known ancestor."

Curious rules applicable to this mode of transmission seem to be partially developed by statistics. It would appear that "this infirmity is more apt to be inherited by the sons of a deaf-mute father, and by the daughters of a deaf-mute mother," and it is a remarkable fact "that the hearing brothers and sisters of a deaf-mute not unfrequently have deaf-mute children."

But the occurrence of deaf-dumbness in families seems to be regulated by no fixed rules, although there are often significant facts having an apparent tendency toward obedience to a general law.

The subject of *deaf-mute marriages*, as a predisposing cause of congenital deaf-dumbness, is interesting, mainly because there seems to be a difference of sentiment as to whether they result in a transmission of the infirmity to the offspring. Attention has been paid to this branch of the inquiry of late years only; and while some authorities infer from statistics that the occurrence of congenital deaf-dumbness is more likely to be greater among children whose parents were both mutes, than among those whose father or mother were perfectly healthy, or one a hearing person and the other a mute, cases of hereditary transmission are so seldom known, that marriages between mutes are now frequently consummated without fear of detriment to the offspring.

Of the whole number of pupils of the Hartford Institution, from the time of its opening to the date of the last report, (1857,) one-third have been married, and three-fourths of such marriages have been between deaf-mutes. "Of the one hundred and forty-two families formed of our pupils who have married, there are deaf and dumb children in only nine of them, while in other families of six or eight children each, all can hear and speak. In conclusion of what we have to say on this head, we would remark, that while it would not be a matter of surprise if persons afflicted with congenital deafness should have deaf and dumb children, still it is far more probable that their children would hear and speak."

Information is still very deficient upon this point, and few works have as yet entered largely into the consideration of the question. Those attached to institutions,—who have more opportunities for studying such facts,—might often give valuable information upon points that are now wrapped in doubt, especially if, as in the case of the Hartford Asylum, they watch carefully the course of their pupils after leaving the institution.

The following extract from the *Liverpool Medico-Chirurgical Journal*, July, 1857, which we obtain from the "*Journal de la Physiologie de l'Homme et des Animaux*," edited by Dr. E. Brown-Séquard, January, 1858, gives a view of the subject so different from that of the Hartford Asylum, that it is deemed advisable to mention it. The article is on the hereditary transmission of deaf-dumbness, by Dr. Buxton; and the author declares that the probability of the existence of deaf-dumbness in children whose parents are both deaf-mutes, is seven times greater than in those who have but one deaf-mute parent. If a given number of children, 540 for example, have a deaf-mute father or mother, and the same number have both parents deaf-mute, there would be twenty-seven among the latter, while there would be but four among the former.

The experience of Dr. Peet is cited by the author of the above article, to prove the same facts; but in his *Annual Report* for 1854, we find the following passage: "It should be observed, that the marriages of deaf-mutes have been rare till within a few years, and hence, that we are not yet provided with a sufficient number of facts to warrant us in assigning positively the proportion of such marriages in which the children may be expected to inherit the infirmity of their parents. We can, however, show that it is much the most common for the children of deaf-mute parents to possess the faculties of which their parents were deprived. More than 190 of our former pupils are known to us to have been married, and only two couple, so far as we know, have deaf-mute children. * * * Of the two cases in which our former pupils have had deaf-mute children, in one the parents were, as we believe, both born deaf, and the mother was one of seven children born deaf out of fourteen. All their children, six in number, (three of each sex,) were born deaf." The passage referred to by Mr. Buxton is probably this: "The marriage of two deaf-mutes is more liable to produce deaf-mute children than the marriage of a deaf-mute with a hearing person, probably in the proportion of six or seven to one. Still the chance is small, except in a few remarkable families, where deaf-mutism seems developed in several branches as a family trait."

In a letter to my father, written in 1853, in answer to inquiries upon the subject,* Mr. A. B. Hutton, Principal of the Philadelphia Institution, makes the following remarks: "As to the propagation of the infirmity by deaf-mute parents, I would say that, from our experience, we have inferred that deaf-mute parents are no more liable to have deaf-mute children than other persons. We have heard of a number of marriages where all the children could hear and speak, with two or three rare exceptions. We have, at present, a mute child of deaf-mute parents, but the cases are few. In Europe it has been observed that the infirmity reappears in the third or fourth generation, and this seems to be partially confirmed by the observations of Hartford and New York."

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* Dunglison's Human Physiology, vol. ii., p. 689; Phila., 1856.

Mr. Wilde* observes: "It is remarkable that while mutism is often manifest in several members of a family derived from a common stock, the defect is seldom transmitted direct from parents to children."

2. The subject of the *intermarriage of relatives*, as productive of affections of a deplorable nature has not, until lately, received the attention it merited. So much time is required to collect data for general laws upon this special point, that it can hardly be said that all have arrived at similar conclusions in regard to it. We know, however, as far as our observations have reached, that such alliances are very frequently most pernicious in their consequences to the offspring. If it were possible to make comparisons between an equal number of children, offspring of marriages of consanguinity and of marriages where no relationship of the parties existed, we might be more competent to form correct conclusions. While one authority seems to consider this a most important cause of deaf-mutism, and to think that "the question has been set at rest by the results of the Irish census," another cites negative testimony to cast a doubt upon the fact of deterioration of this kind occurring so frequently as is generally supposed.

The statistics of Ireland assuredly give as satisfactory a statement as could well be desired in proof of the existence of such active influences: 154 instances were collected, in which the parents were related in the degrees of first, second, or third cousins. The result of these intermarriages was nearly 100 cases—"eighty-six congenital and six acquired—of one mute in a family; four of these were dumb only; and four were dumb and idiotic. In thirty-four families, where the parents were related, two children were deaf and dumb, in only one instance of which the disease occurred after birth. There were fourteen instances where three mutes were born in families so circumstanced; and three where four in each family were deaf and dumb. The parents were also closely related in instances where six and seven in a family were similarly afflicted."†

Such testimony as is afforded by the careful observations of those who have made the subject a special study is too powerful to be resisted; and although we may have negative testimony of such marriages taking place without being attended with such unhappy results, our belief in this as one of the predisposing causes of deaf-mutism must remain unchanged. All who have opportunities afforded them for collecting facts bearing upon the solution of these difficult questions, and all who are interested in the diffusion of a knowledge of the general laws that seem to regulate the existence or absence of deaf-dumbness, should give their attention to these points. They should examine the matter as a question not yet decided; and while they may be disposed to infer at the outset that marriages of consanguinity are often unfortunate in their effects, let them bear in mind that there are parts of the world where tribes are in the habit of marrying among themselves, and that evil consequences of the kind mentioned have not been noticed. From inquiries instituted in some portions of Europe, and in one village especially, where a quarter of the marriages were between first cousins, there seemed to be no prejudice existing against such alliances on the ground of degeneration in the offspring.*

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* *Op. cit.*, p. 444.

† Wilde, *Op. cit.*, p. 442.

Dr. Peet† shows, from the facts furnished by Mr. Wilde as the results of the Irish census, that of congenital cases about one in sixteen were the offspring of parents who were related within the degrees mentioned, but of the accidentally deaf, only about one in seventy; and that congenital deafness appeared at least four times, perhaps five times as often from a marriage between cousins, as from a marriage between persons not related. In other words, if in Ireland, in the general population, one child in 1700 is born deaf, of the children of cousins about one in 350 or 400 is born deaf. From the result of observations in the United States, he infers that if there is one child congenitally deaf in 3600, of the children of cousins there will be about one in 700.

3. Of *locality*, as a predisposing cause of the spread of deaf-dumbness, we have partially treated in the investigation of the prevalence of the infirmity in mountainous districts of country. But another point, elicited by censuses, is the fact of the greater proportion existing in rural districts as compared with cities. This is applicable only to congenital cases; epidemics of a fearful nature sometimes visit cities, and leave the country untouched; and deaf-dumbness follows naturally in the train, thus adding extensively to the number of cases arising subsequently to birth. Besides this, the nature of city life, in some of its worst phases, is such as to induce disease and suffering of the most unfortunate kind, and thus act as agents in the spread of deaf-mutism. It is in crowded portions of cities that we often see scrofulous cases or the most violent forms of epidemic scarlatina, and these are two important antecedents of deaf-dumbness.

The Belgian statistics exhibit the following figures in relation to the greater prevalence of deaf-mutism in country districts; as the majority of such cases are congenital, it is more expedient to introduce the subject under the head of congenital causes.

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* Nottingham, Diseases of the Ear. Illustrated by Clinical Observations. 8vo. London, 1857.

† New York Report, 1854.

Number of deaf-mutes in cities	373
" " " country	1373
Population in cities	946,807
" " country	2,938,700
Proportion of deaf-mutes to city population	1 in 2540
" " country population	1 in 2140

It is unfortunate that we are unable to furnish any statistics bearing upon this question from our last census returns, no trouble having been taken to separate cities and counties from each other. If the census of 1840 be taken as a guide, we may deduce some information as to the greater amount of deaf-dumbness in rural districts.

Massachusetts (except Boston) had	42·5	deaf-mutes	in every	100,000	of population.
Boston had	17	"	"	"	"
New York State (except New York City)	42·6	"	"	"	"
New York City	25·9	"	"	"	"
Pennsylvania (except Philadelphia)	43·9	"	"	"	"
Philadelphia	20·8	"	"	"	"
Maryland (except Baltimore)	58	"	"	"	"
Baltimore	30	"	"	"	"

These statistics refer to the deaf and dumb as a class, and without any distinction of congenital and acquired cases. They prove, however, the general fact that, from various causes, the number in the country, as contrasted with the cities, is very large.

The Irish census gives us also an idea of the ratio existing between congenital and acquired cases in the city and country. "In the former class, the proportions were one in 2115 in the civic, and one in every 1670 in the rural, whereas in the latter the reverse obtained—the acquired being in the proportion of one in 9104 in the civic, and one in 13,107 in the rural."

II. *Causes of Acquired Deaf-Dumbness.*—It is difficult to classify all the causes of deaf-dumbness systematically. Each arrangement heretofore adopted has some peculiarity, and no uniform plan has been agreed upon, by which all the institutions of this country or of other countries could compare the results of their observations. The simplest mode of classification, according to Mr. Wilde,* is that which embraces affections acting locally on the organ of hearing, diseases and accidents affecting the brain and nervous system, and unclassified causes. But this is a classification which, in a large number of cases, would embrace, under the head of "Unclassified," so many causes not allotted to the other heads, and so few of the tables hitherto prepared could be compared with it, that it is thought better in the present article to suggest what is believed to be a new arrangement, under which all the various causes can be satisfactorily comprehended.

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* *Op. cit.*, p. 456.

The division is into heads, according as the causes of acquired deaf-dumbness are of pathological origin or are mechanical, a third division including causes whose nature has not been discovered. Examples of special diseases are given under different subdivisions, without any attempt to make the table sufficiently full to include all the multitude of causes that may operate.

Classification of Causes of Acquired Deaf-Dumbness.

I. PATHOLOGICAL CAUSES:
    1. Diseases of Respiratory and Circulatory Apparatus.
        Croup and Hooping-Cough.
        Catarrhal Affections.
        Pneumonia.
    2. Diseases of Digestive Apparatus.
    3. Affections of Nervous System and Organs of Sense.
        Paralysis and Apoplexy.
        Epilepsy, Chorea, Convulsions, etc.
        Encephalitis, etc.
        Sudden Emotions.
        Various Affections of Head, Neck, and Ears.
        Unclassified Nervous Affections.
    4. Diseases of Various Organs.
        Scarlatina.
        Measles.
        Smallpox.
        Fevers (unclassified.)
        Scrofula.
        Rheumatism, Dropsy, etc.
    5. Unclassified Pathological Causes.
II. MECHANICAL CAUSES:
    Falls, Injuries to Head, Ears, etc.
    Effects of Cold and Exposure.
    Immersion in Water.
    Burns.
    Unclassified Mechanical Causes.
III. UNKNOWN CAUSES.

In the "American Annals of the Deaf and Dumb" for April, 1856, there is an "abstract of seven hundred and eighty-seven cases, collected from the institutions for mutes at Paris, Copenhagen, Leipzic, Prague, Cologne, St. Petersburg, Dresden, Hamburg, and Modena, in Europe; and Hartford, New York, Philadelphia, and Columbus, in the United States." This is republished from the Eighteenth Report of the New York Institution. The general average of causes, as deduced from that table, is as follows:—

Pathological Causes	44 per cent.
Mechanical "	5 " "
Unknown "	51 " "

This is a very unsatisfactory classification, on account of the evident want of accuracy in the statistics of causes in many of the institutions named; the number of unknown causes being so much larger than those which were ascertained.

The causes of deafness in Europe, in 1630 cases, have been arranged in a table* which, modified, gives the following result:—

Pathological Causes	71·5 per cent.
Mechanical "	9 " "
Unknown "	19·5 " "

This corresponds very closely with the experience of the Hartford Asylum in the case of its own pupils.

In 1314 cases recorded in the institutions of the United States, the proportion was found to be as follows:—

Pathological Causes	68 per cent.
Mechanical "	5·3 " "
Unknown "	26·7 " "

Perhaps if all the causes were known, the difference between Europe and the United States in the general average would be but slight, whatever variation there might be in regard to special diseases.

The most frequent causes of deaf-dumbness in Europe and America are scarlatina, measles, and fevers of various kinds. In the United States, scarlatina is by far the most active exciting cause, while in Europe, if statistics be reliable, fevers seem to occupy about the same position as it holds with us. The relative numbers may be thus given:—

In every 1000 cases of deaf-mutes, there were of

Scarlatina	80 in Europe,	200 in the United States.
Measles	34 " "	43 " "
Fevers	175 " "	133 " "

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* Thirty-Fifth New York Report.

Whenever epidemics of scarlatina occur in any part of a country, the proportion of deaf-mutes to the population is likely to increase, and this has been markedly the case in our own country. Parts of Europe, too, suffer from its ravages, but it is in the United States that it forms a most alarming cause of deaf-dumbness. One-fifth of the whole number of cases are the results of violent attacks of scarlatina; fevers of all kinds being the next most important causes. In Europe about one-sixth of the cases have been preceded by severe fevers, which have resulted in a destruction or irreparable injury of the organs of audition. We rarely hear of towns or districts of country in which the disease of early infancy, scarlatina, is of so common occurrence as with us.

Dr. Peet thinks it is only of late years that scarlatina has been so great a scourge to our country, and he exhibits the following figures to confirm this view. In Philadelphia, "the whole mortality from this disease, from 1815 to 1829, inclusive, was 92. In 1830 there were 40 deaths by this disease; in 1831, 200; from 1831 to 1846, inclusive, 3391."* The number of cases of deaf-mutism admitted into the American institutions, preceded by scarlatina, has increased greatly since 1840. Of the pupils previous to that year, one case in forty-one was ascribed to scarlet fever; since that time, about one case in eight.

What proportion of cases of deaf-mutism are congenital, or, in other words, what is the ratio of acquired cases to congenital?

The experience of the Hartford Asylum, as recorded by its able principal, Rev. W. W. Turner, is here given:—

Cases of congenital deafness	542
Hearing lost	483
Not ascertained	51
Not deaf	5
	1081

The proportion deduced from this statement is as follows:—

Congenital cases	50 per cent.
Acquired	44 " "

A general summary of the two classes of cases, compiled from many of our American reports by Dr. Peet, gives the following result in 3855 cases:—

Cases of congenital deafness	1812 or 47 per cent.
" " acquired "	1569 or 41 " "
Unknown	474
	3855

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* New York Report, 1854.

From the same source we learn several facts in regard to the two classes of cases in Europe. The American figures are here added to facilitate a comparison. It will be observed that the general ratio for Europe differs widely from this country, and that Germany has a ratio peculiar to itself.

	Congenital.	Acquired.
Sum of European returns (except German schools)	400	100
German institutions	95	100
United States	116	100

In Ireland eighty per cent. were congenital, or a ratio of 400 congenital to 100 acquired; while in Belgium, there were 373 to every 100.

Diseases Coexisting with Deaf-Dumbness.—Belgium has, in one of her elaborate works, furnished a list of diseases which have been found to occur coexistently with deaf-mutism. It is valuable to the medical profession, and is here translated, as it is rarely that we meet with a summary of the kind. It is collected from various sources.

	Deaf-Dumbness.		
	Congenital.	Acquired.	Total.
Idiocy, or Mental Alienation	78	12	90
Paralysis	23	9	32
Epilepsy	12	4	16
Blindness	3	2	5
Loss of an Eye	6	2	8
Weakness of Sight	1	3	4
Asthma	2	—	2
Rachitis	3	—	3
Gôitre	6	—	6
Hernia	2	—	2
Diseases not specified	7	4	11
Lameness	6	2	8
	149	38	187

We learn, therefore, that where deaf-dumbness was complicated with other affections, about forty-eight per cent. were cases of mental defect of some kind, as idiocy or insanity, and about seventeen per cent. paralysis. The materials afforded, however, are too scanty for us to deduce any general laws.

Proportion of the Sexes.—The male sex among the deaf-mutes is largely in the majority, even in countries where there are more female than male inhabitants. This is a rule that obtains in almost every country. Great Britain has 121 male deaf-mutes to every 100 females, and in Scotland the inequality is somewhat greater, 125 males to 100 females. The congenital cases vary from the acquired upon this point, for we find in Ireland, for example, 100 males to 74·61 females in the former class, and 100 to 91·46 in the latter. The result in Europe, in 33,224 cases, was 14,573 females to 18,651 males, or 78·1 to 100, but no division is made into congenital and acquired cases. In the American schools, in 2754 cases, there were 771 male deaf-mutes to 665 females, among the congenital cases, or 100 males to 86 females; while there were 770 males to 548 females among the acquired cases, or 100 males to 71 females.*

Post-Mortem Examinations of Deaf-Dumbness.—In a large number of cases the true pathology cannot be studied during life, portions of the ear being affected which are not accessible to the observation of the physician. Post-mortem examinations, too, are exceedingly rare, so that much of what we know about the causes of deaf-mutism must be founded on conjecture. In congenital cases there is great reason for believing that the auditory nerve has not been fully developed, or that other portions of the apparatus have suffered some abnormal changes. The internal ear is doubtless the part most involved in congenital cases. In the case of "a deaf and dumb boy, five years and eight months old, who died of croup, on the 21st November, 1855," a post-mortem examination was made, and is thus given by Mr. Nottingham:†—

"This patient was clever and intelligent, and had commonly enjoyed good health, but from the earliest period of his life had been totally insensible to sound, and, of course, had never attained the power of speech; the head, the external ear, meatus, and membrana tympani, were well formed. The tympanum, on both sides, was found to be choked, if this expression may be employed, by a pale, grayish mass of apparently inspissated mucus; there was no other morbid appearance seen in the tympanic cavity, the ossicles, the membrana tympani, and the membranes of the fenestræ, being in normal condition. The eustachian tube was sound and pervious. The roots of the auditory nerve were exceedingly small—faint white lines—and the trunk of this nerve was still more remarkable for having less than the normal size. The small size of the lingual, or motor nerve of the tongue, was also remarkable; the glosso-pharyngeal nerve was also very small, and the thyroid body had less than its normal dimensions."

"In another case of congenital deaf-dumbness, in a girl, of nine years of age, who died with serous effusions into the ventricles of the brain, which followed an attack of scarlet fever, careful examination of every part of the auditory apparatus was made, but without the discovery of any deviation from the normal anatomical conditions, with the exception of an apparently small size of the trunk of the auditory nerve, which, having reached the bottom of the internal meatus, divided, and was distributed in the usual manner."*

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* Thirty-Fifth New York Report.

† *Op. cit.*, p. 587.

In the *British and Foreign Medical Review*, vol. iii., p. 227, we find the translation of an article by Dr. Bergmann, first published in the *Hannoversche Annalen für die gesammte Heilkunde*, Band 1, Heft. 1, 1836, on the appearances found on dissection of a deaf and dumb person. The patient died of a fever, with pulmonary symptoms.

> "The brain was in a normal condition, and its different parts exhibited no deviation from their usual structure. The external ear was of a natural conformation, and the meatus externus and membrana tympani presented no unusual appearances; but the membrane which lined the hollow of the tympanum was of a spongy, sarcomatous nature, and that which covered the bones of the internal ear was similarly affected, so that their motion might have been somewhat impeded in consequence. In the hollow of the tympanum of both sides there was a quantity of thickish mucus. A hard concretion, about the size of a mustard-seed, covered the fenestra rotunda on the left side. The semicircular canals were of a natural form, but degenerated internally; they seemed to have contained some fluid, but in very small and insufficient quantity. The thin, transparent lining membranes, (ductus semicirculares Scarpæ.) the ampullæ, and the nerves, could not be distinctly discovered on either side. The defects here were evidently of a nature to have interfered materially with the exercise of the function of the organ. They could not have been affected by the process of examination, for the appearances presented were precisely similar on both sides. The cochlea was found in its usual condition, and appeared to be properly supplied with nerves. Whether the defects visible in the semicircular canals were congenital or the result of disease, it was of course impossible to ascertain."

After enumerating all the varied causes of deaf-dumbness and the interesting statistical points which arise in connection with the subject, we ask ourselves, Is deaf-dumbness curable? Sad experience answers negatively in almost all cases, and the medical man laments his inability to supply deficiencies in what nature has neglected to accomplish, or to restore to healthy vigor that which disease has impaired or destroyed. There are few physicians who do not feel, when such cases present themselves to their notice, that their efforts must fail to alleviate the condition of their unfortunate patient, because they cannot remove the cause which has given rise to it.

But it may be asked, whether there are not some cases in which hope may be indulged, and an important sense be restored to normal action. Of course it is unnecessary to speak of congenital cases, for the most thorough knowledge of the healing art can never be sufficiently potent to supply defective, or to remedy a diseased, structure, which is far beyond the physician s reach. It is in acquired deaf-dumbness that we occasionally hear of cases in which benefit, it is affirmed, has been obtained. Too often these are the unfounded statements of itinerant aurists, who have no reputation to lose. When good effects have resulted from treatment in deaf-mutism, it has been in cases where the deafness has resulted from occlusion or obstruction of the Eustachian tube; and in strumous affections of the middle ear, the result of scarlatina. But, in almost all such, the benefit has been transient; and we are unhappily driven to the painful conclusion, that the deaf-mute must be left to the gloomy reflection that his malady is irremediable.

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* Nottingham, *op. cit.*, p. 589.

ART. II.—*Surgical Cases.* By A. LOPEZ, M.D., of Mobile, Alabama.

CASE I.—*Injury of the Forearm, with Extensive Destruction of Parts; Recovery without Amputation.*—Gabriel, a black lad, aged sixteen, was an attendant in a rice-mill on a plantation, where his duty was to feed the mortars. In order to explain the character of the injury, I will describe a portion of the apparatus concerned. There are two uprights, across which, about midway, there is a large horizontal beam or girder. Through this latter, at various distances, are mortices for the transit of the pestles, which fit as perfectly in them as possible, allowing only for the free passage up and down, to and from the mortar beneath. The mill being at full speed, Gabriel was at his station, feeding the mortars, and, as he was exhausted, leaned his head and left arm against this middle beam or girder, in which position he nodded, while mechanically discharging his duty. He ultimately fell asleep, and slipped from his position just as the pestle was ascending. The act instinctively caused him to throw forward his right hand. As he fell, the palm of his hand came in contact with the inferior ascending portion of the pestle, and before he recovered himself, the whole hand and arm were carried up through the mortice, between its inner surface and the pestle. The most extraordinary circumstance is, that the space through which his arm passed could not, while the mill was at rest, receive more than the blade of a case-knife introduced flatwise.* The wheel was stopped as quickly as possible, and it was then found impracticable to extricate him except by sawing through the timber on each side of his arm, which was tightly wedged. As soon as the removal was accomplished, the usual domestic remedies were applied, and the limb tightly wrapped in several bandages, when a message summoned me to the plantation, distant between three and four miles. On my arrival, he was lying beneath the shade of a tree, with as little suffering as usually attends such vast destruction and its shock. He was placed on a mattress in a cart, and carried to town slowly and carefully, giving him, previous to his departure, one hundred drops of laudanum, as I feared the effects of the injury upon the negro idiosyncrasy. The envelopes being removed, the following condition was exhibited. The palmar surface of the wrist was cut deeply through the annular ligament; the wound extending from the radial to the ulnar side. The radial artery at the pulse was unhurt. On the upper and outer portion of the forearm there was a total destruction of the fleshy and tendinous structures from their insertions and interosseal attachments upward, to their origin at the two condyles of the humerus. The parts involved were—1. The extensor carpi radialis; 2. Extensor carpi radialis brevior; 3. Extensor pollicis; 4. Extensor digitorum communis; 5. Extensor carpi ulnaris. These muscles, with their entire tendinous attachments, were stripped from their osseous and other connections as though they had been scraped with a planing machine. All the minor arteries and veins with their ramifications were destroyed, and the radial and ulnar nerves with their twigs torn to shreds. The radius was fractured transversely at two portions of its shaft, distant from each other about four inches. The tattered condition of the limb presented a most unfavorable prospect for successful experiment, yet we were compelled to try, as permission was peremptorily refused to have his limb removed. We as urgently recommended it, pointing to the extent of the lesion, the thorough destruction of parts, and excessive heat of the weather. We told him of the liability to lockjaw, and to the whole train of constitutional symptoms, but beyond all, our own responsibility. Notwithstanding, he insisted on an attempt to save the limb, and we yielded, "*par force.*" It is needless to detail the various means pursued from stage to stage; nay, frequently from hour to hour, driven as we were by an intensely high thermometrical range, to combat constitutional irritation and mortification. We ran through the list of antiseptics externally as well as internally applied. The most important and efficient agents were yeast and

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* See *Amer. Jour. Med. Sci.*, No. xlii., p. 387, February, 1837, for an account of "Arm and Shoulder Torn from the Body," reported by Dr. Mussey, who, after detailing the accident and lesion, says,—"I measured accurately the space between

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the drum or cylinder (of the mill in a cotton factory) and the ceiling, *through which he passed several times*, as before stated, and found it to be *scarcely seven inches and a half.*"

nitric acid, but I ascribe the successful issue chiefly to the free use of pyroligneous acid, one part to three of water.

By the most undeviating personal attention, three times daily from the date of the accident to the 24th of September ensuing, we finally triumphed in carrying the patient through the successive processes of sloughing, moderating suppuration, (which once or twice threatened seriously from its profusion,) and promoting granulation, and at last cicatrization. Once during the treatment, in the early stage, owing to high reaction, we were compelled to resort to venesection and antiphlogistics.

The fractured portions of bone were thrown off. When we dismissed Gabriel, we certainly were well pleased with the result, as he had an arm which, if not perfect in form or usefulness, was certainly more sightly than a stump, and it moreover added another to many proofs that there are numerous cases where the surgeon's knife, like the patriot's sword, should never be unsheathed until all constitutional means have failed.

CASE II.—*Injury of the Eye: Rupture of the Sclerotica by a Blow; Separation of the Iris from its Ciliary Connections; Extensive Extravasation: Adventitious Pupil.*—Kelly, an Irish laborer, during a drinking frolic, engaged in a fight, was knocked down, and received while on the ground a kick in the ball of the left eye, from the pointed shoe of his antagonist. This occurred on the 13th of March, 1841. He remained at his lodgings without aid until the 15th, when he sought my advice.

The inferior and superior palpebræ externally were entirely and deeply ecchymosed; and the cornea, sclerotica, and conjunctiva one chaotic mass, totally undistinguishable as an eye. It presented the appearance of a lump of currant jelly held before a strong light. The conjunctival linings of the upper and lower lids were heavily laden with extravasated blood, partly coagulated and partly fluid, hanging down over the ball in bags. Acute lancinating pains shot through the orbit. The brightest rays of light from either the sun or a candle were inappreciable.

I evacuated the extravasated blood by extensive scarifications, removed the coagula, and ordered continued applications of pledgets wet with a solution of acetate of lead during the day.

16th.—Ordered six leeches to the eyelids and temple, and compound cathartic powders, with strict diet, gruel and iced water.

17th.—Leeches drew well; powder operated freely; less pain and tension; no vision. Wet cups to the temporal regions; repeat purge; continue lotion.

18th.—Obtained by cupping yesterday five ounces of blood; powder operated; no vision; slight absorption. Ordered four grains of bichloride of mercury to four ounces of distilled water to be dropped tepid into the eye three times a day. I scarified again, and encouraged the depletion by warm bathing.

19th.—Absorption still progressing, but very slowly. By darkening the room and placing a lighted candle just before the eye, he is slightly sensible of its impression. Ordered blister for the neck; scarify again; continue eye-wash.

20th.—Blister drawn and discharges freely; absorption still going on; can indistinctly distinguish the shadow of my hand moved to and fro, although he cannot tell what the object is. Continue eye-water.

21st, 22d, 23d, 24th.—Same as on 20th. I scarified the eye on the 23d, and increased the wash by adding two grains of the mercury to the ounce of water.

25th.—Eye much less injected; absorption proceeding. Being a cloudy day, and his bowels not having been moved for three days, he does not see as well to-day. Ordered saline aperient; change wash for four grains of nitrate of silver to the ounce of water. I applied by means of a hair-pencil tinct. iodine (℈ij to ℥i alcohol) over the entire surface of the external orbit and around the temporal bone. In less than three minutes it burnt intensely, and continued so for a half hour.

26th.—Says he saw better last night than at any time since the injury. He could distinguish the walls and furniture of his chamber. Continue collyrium; repeat tinct. iodine, diluted one-third.

27th.—Materially improved; distinguishes a gold pencil-case. I held up a stethoscope, which he said looked like a flute, which proved that he saw it. Continue collyrium; insert a seton in his neck. To-day the absorption permitting a clearer inspection of the parts, I placed him in a strong light, and by means of a powerful lens, I perceive that the substance of the iris is to a greater or less extent absorbed; the pupil has undergone a deviation from its normal situation at the centre, being thrown upward upon the circumference of the membrane, assuming a semilunar or crescentic form; it is movable.

28th.—Better; distinguishes the books in my library, also a pen held up to him at the distance of two feet. Before he can decide upon the object held up for inspection, he has to use some varied movements of the head, so as to fix the axis of vision. The seton discharges. Continue collyrium; apply tinct. iodine, diluted one-half; saline aperient solution.

29th.—Salts operated; seton not discharging freely; smear it with ungt. basilicon, and apply warm poultice over it. He distinguishes to-day a small pill-box eighteen inches from the eye, also the male and female figures of an anatomical plate. The iodine yesterday burnt less; ecchymosis nearly disappeared; the separation of the iris from its ciliary connections is now perceptible. Repeat collyrium.

30th.—Increase collyrium; two grains of the salt to the ounce of water.

31st.—Can read the name on my sign. Continue collyrium.

April 1st.—Seton discharges profusely. Continue wash. The seton being nearly exhausted and harsh, insert a fresh skein of silk.

6th.—Seton discharging; eye free from injection; lids have resumed their natural size and appearance; eye lachrymose. Suspend collyrium and substitute sulphate of zinc, four grains to the ounce of water, to be used three times a day. He continued under treatment a week longer, and was dismissed cured. He sees as well as ever, and has escaped the amaurosis so common in such injuries, for doubtless the retina was severely concussed.

In all of my trials to prove his sight, I was careful to guard against deception by securing the sound eye. I attribute material benefit to the tinct. iodine, from the fact that the absorption of fluids extravasated in the chambers of the eye did not commence, nor proceed so decidedly, until it was employed.

CASE III.—*Physiological Surgery after Amputation.*—James, a negro, was shot, while in the woods, the contents of the gun entering his arm and forearm, destroying the bony and muscular structures of the extremity to within four inches of its scapular attachment. He remained in this condition for two days, when he was found and brought to the city. I was sent for, and found one mass of offensive putrefaction. Above the solution of continuity, the surrounding skin was diffusively inflamed and heated. This was in the afternoon. I told his friends that he had but one chance for life, and, of course, the means were obvious, but I would defer the operation until morning, directing, in the intermediate time, the constant application of cold, evaporating lotions to the inflamed surfaces, and regulating the necessary reaction of his system. Next day at noon I proceeded to the operation. The undestroyed portion of the limb being too short to allow the use of a tourniquet, the pressure of which, moreover, could not have been well borne, I arrested the circulation by the application of a key above the clavicle, confided to the care of Dr. Prior. The arm was removed by the circular operation, and an anodyne immediately administered.

On the third day I opened the bandages, when a hot and offensive fetor was emitted. The adhesive straps had fallen off, owing to the copious flow of a thin, ichorus matter, and the edges of the wound gaped; great heat and erysipelatous inflammation existed around and above the stump. Applied wet cups to the shoulder, and a flaxseed cataplasm to the stump. Ordered nitro-saline powders every four hours, with antiphlogistic diet.

By a continuance of this course for three days, the inflammation was subdued, and healthy pus established, with a granulating process. The wound gradually healed, the ligatures coming away in due time, leaving a very excellent stump.

Case IV.—*Incised Wound of Abdomen entering the Intestine—Escape of Fluids through the Wound—Union and Recovery.*—Stepney, aged forty-eight, received a wound from a large clasp-knife, in the abdomen, on the left side above the umbilicus, entering a fold of the jejunum. This having occurred some distance from the city, he was brought down in a boat. I found it necessary to cleanse and return the protruded bowels, and secure the edges of the gut to the external opening. He had bled profusely. Pulse feeble and quick; skin cold and clammy; slight hiccough; senses perfect. After much trouble, full reaction was restored.

Treatment.—Simple enema to unload the lower bowels, and to ascertain if there was internal hemorrhage. Bowels relieved; no hemorrhage. A portion of whatever was administered by the mouth, either of food or medicine, passed through the wound. He was confined to a strict antiphlogistic regimen, with occasional enemata. On the second day, high, constitutional irritation, fever, pain, and much thirst. There was ℥xvi diaphoretics and saline mixture. These subdued the urgent symptoms. The wound progressed favorably in its union, which was evident by the diminished escape of ingesta until it cicatrized perfectly.

Case V.—*Muscular Contusion with Disruption of Fibres.*—Leurendin, a mulatto creole, aged 17, attempted, on the morning of Sept. 13th, 1843, to raise a dead hog above his head, in order to hang it upon a hook. Being unequal to the task, he lost his balance and fell backward, the hog falling over his shoulders. The strain was very severe, and he complained for several days, when a circumscribed swelling, accompanied with much pain and heat, appeared over the right scapular region. It continued to increase in dimensions and severity, when I was consulted. It had now acquired the size of a goose's egg. I applied liberally on and around the tumor, tincture iodine ℈ij to ℥i alcohol. This partially relieved the pain and tension, but did not reduce the swelling. Its application was continued two days longer, and temporarily circumscribed the walls of the cavity; but I perceived a deep-seated fluctuation, which, from day to day, approached the surface, and involved the subcutaneous texture over the entire scapula. I opened it freely by a valvular incision at its most dependent part, and by placing the patient in a favorable posture for the escape of matter and gradual pressure, it discharged about fourteen ounces of pus. In order to prevent its further diffusion through the surrounding tissue, I applied a bandage with tolerable pressure from the lower part of the thorax upward, so as to urge the matter toward the opening. By these means, in the course of a week, I emptied the sac, and then finding it indisposed to assume internally an adhesive action, I threw in, twice daily, a solution of nitrate of silver, four grains to the ounce, previously cleansing it out with castile soap and water. In a fortnight it was entirely healed.

CASE VI.—*Gangrene Cured by the Use of Pyroligneous Acid.*—Jack, a colored man, was sent to me, August, 1824, with a request that I would amputate the hand. The condition of the patient was a sphacelation of the entire right hand, from the tip of the fingers to its carpal junction. The swelling was enormous. This state was the result of a phlegmonous abscess, at first neglected, and ultimately maltreated by the overseer, who, too frequently, from motives of "economy," is installed surgeon and physician to the estate. Things bore an unpromising aspect, and very little else was to be hoped for than a resort to amputation, not only on account of the destruction already present, but from the menacing prognosis; besides, the thermometer at 90° Fahr., offered no encouragement. I determined, however, to save, if I could, and operate, if I must,—a rule which I always adopt. I commenced with the ordinary means of combating such sequence to inflammation, and tried the carrot, yeast, and bark poultices, with nitric acid washes, and other remedies. These of course mitigated suffering, and, to some extent, improved appearances, yet nothing definite was accomplished

The pyroligneous acid was attracting attention as an antiseptic, and I had frequently used it for domestic purposes as a preservative for meats, during the summer, even when the article was what epicures call a "little short." It suggested itself to my mind that it could be equally serviceable remedially. A solution one-fourth acid, and three-fourths water, was prepared, and, removing all other applications, I kept the hand enveloped constantly in cloths saturated with the wash. In less than twenty-four hours the fetor, hitherto insupportable, was removed, and the face of the wound improved; sloughing commenced from a well-defined line of demarcation, and, by continuing the use of this prescription, in due time sloughing was completed, granulation and healthy pus substituted, and, finally, cicatrization perfected a cure. The hand was, of course, not so symmetrical, but by no means deformed, and certainly useful, as well as more ornamental than a stump. I have since used the remedy with equal satisfaction. There is a great choice in the article.

ART. III.—*Proceedings of the Pathological Society of Philadelphia.*

Reported by the SECRETARY.

WEDNESDAY EVENING, September 8th, 1858.

The President, DR. GROSS, in the chair.

Abnormal Size of the Groove for the Meningeal Artery, and Dilatation at its termination.—DR. AGNEW presented a skull with a very large groove for the great meningeal artery of the right side, and near the vertex at the termination of the groove, a depression of sufficient depth to receive the end of the middle finger. He remarked that the Society would remember that on a former occasion he had exhibited a skull-cap having a similar groove and depression, but as no history could be obtained all explanations offered were only problematical. It was believed, however, to be due to an aneurismal dilatation of the vessel. The present specimen he thought might furnish a satisfactory explanation of the condition in question. The artery though unusually large, does not exhibit any positive evidence of dilatation, and near the vertex the main trunk breaks up into a great number of small parallel branches, with unusual groups of Pacchionian bodies placed between. Wherever these bodies are found there are usually little pits in the inner table of the cranium for their reception. In this case the extraordinary size of the groups placed among the numerous meningeal branches, derived from the main arterial trunk, will account for the large depression.

Tubercular Abscess of Right Kidney, and Chronic Inflammation of the Bladder, with destruction of its Mucous Membrane.— DR. GROSS exhibited a diseased bladder and kidney removed from John Anthony, aged fifty years, a resident of Carbon County, Pennsylvania, who had been suffering for four years with symptoms of vesical and renal disease. He consulted Dr. Gross early in August last; he was much emaciated, and became easily fatigued from the slightest exercise. He complained of pain in the right loin, and very severe pain in the region of the prostate gland. When first seen he stated that he had come to be treated for stricture of the urethra; but upon introducing a sound, the canal was found to be completely pervious, although somewhat tender; the sensation imparted by the examination was such as to induce the belief that the muscular coat of the bladder was hypertrophied and columniform. Mr. Anthony passed his water during the day about once every hour, and was obliged to get up seven or eight times during the night. His urine, which was offensive and scanty, was passed in a small stream, with much pain, and contained pus. The pain in the region of the prostate was so severe as to require the use of opiates. His appetite was bad, and he complained of cough, with expectoration. The treatment consisted in the administration of the copaiba mixture with morphia to relieve pain, and he was ordered brandy and a nourishing diet; but he had no appetite for anything, and died in about two weeks from utter exhaustion.

Upon examination, seven hours after death, the right lung was found to be adherent to the pleura throughout the whole posterior aspect of the superior lobe, and in the apex and back portion of the same lobe a large tubercular cavity was found, as well as several smaller ones. The mitral tricuspid and aortic valves were thickened, and in some portions opaque; in other respects the heart was normal. Some of the mesenteric glands were enlarged. The left kidney was healthy, but the right was enlarged, and firmly adherent to its investing membrane. The substance of the gland was in some places so thin as to show the presence of pus beneath. Upon a section being made, this fluid gushed out to the amount of about two ounces; it was offensive, and bore all the distinctive features of being tubercular. The cortical portion of the kidney was much discolored. The ureter was but little enlarged, and contained some matter. Its mucous coat was slightly inflamed, and presented a capilliform injection.

Upon removing the bladder the index finger perforated the very thin walls at its apex, allowing the escape of a large quantity of pus into the pelvic cavity. The mucous membrane had completely disappeared, leaving the muscular coat entirely denuded, and presenting a deep maroon appearance. A cavity containing pus was found in the left lobe of the prostate gland, and the prostatic portion of the urethra was without a mucous covering. The bladder contained about six ounces of purulent matter mixed with a small quantity of urine.

DR. GROSS believed that such complete destruction of the mucous coat of the bladder was always the result of tubercular disease. He had examined several specimens which had confirmed him in this opinion. The deposits of tubercle taking place in the submucous tissue give rise, by their softening, to the extensive destruction witnessed in the organ.

DR. STILLÉ inquired whether there had ever been gonorrhœa. The morbid appearances, both in the bladder and kidney, did not seem to him to be of necessity tubercular; they might have been caused by a cystitis or nephritis, and the tubercular disease of the lung be independent of the affection of the urinary organs. No distinct tubercles in the kidney were perceived.

DR. GROSS replied that a disease of the urethra had not at any time existed.

DR. KELLER spoke of a case of tuberculosis of both kidneys which had come under his care for a supposed vesical affection. The bladder was, however, found to be perfectly healthy, but the normal structure of both kidneys was entirely effaced. In one, the disease with what remained of the renal tissue formed a confused mass of broken down texture, in the other, the isolated gray tubercles were distinct.

Cystic Growths on Intestines.—DR. PACKARD stated that the subject in whom these growths were found was a man, aged thirty-seven, a patient in the Pennsylvania Hospital for nearly a year, on account of ascites, for which he was eight or nine times tapped; cirrhosis of the liver was suspected.

The abdominal cavity, when laid open at the autopsy, showed abundant traces of chronic peritonitis, the serous membrane having deposits of lymph scattered over its entire surface. The liver particularly was encased in a thick layer of false membrane, but its size was not notably diminished, nor was there anything else abnormal about it, except that its tissue was less easily torn than is usually the case.

The intestines seemed entirely healthy, but at different points along the canal were attached cystic growths, over a dozen in number; these growths were of various sizes, from that of a marble to that of an orange, the largest being situated in the great omentum, close to the transverse colon. They had no connection, vascular or otherwise, with the bowel, merely lying in the sub-serous tissue. One of the smaller ones only was subjected to a careful examination: it contained a clear-yellow liquid, somewhat ropy, like synovia, and stretching in a wavy manner through this were several flocculent masses or bands, like imperfectly-formed septa. The liquid, placed under the microscope, was entirely homogeneous, but here and there one or two nucleated granular cells were seen floating in it. The flocculent bands alluded to were found to have a dimly-fibrillated or nebulous appearance.

DR. HEWSON reported the death of the patient whose thigh-bone he had exhibited to the Society. (See Proceedings of Dec. 23d, 1857.) The wound had nearly healed, but a troublesome diarrhœa set in about three months after the operation, which exhausted the patient. He died on the 16th of July.

WEDNESDAY EVENING, September 22d, 1858.

The President, DR. GROSS, in the Chair.

Abscess of the Brain following Fracture of the Skull.—DR. HALL exhibited for DR. HUTCHINSON a fractured skull and an abscess of the brain. The patient, R. W., aged twenty-three, colored, was admitted into the Pennsylvania Hospital on Friday, September 10th, with contused wounds of the scalp and two wounds of the face, which appeared to have been made by penetrating instruments. Through one of the wounds of the scalp a depressed fracture of the parietal bone was discoverable; the zygoma also was found to be fractured. The patient was unable to give any particulars of himself, and no satisfactory account of the accident has been obtained. He was able to walk, but was, during and after the examination, so exceedingly restless, that he had to be confined. His pupils were sluggish, but neither dilated nor contracted; the pulse was ninety-four. He was trephined the next day, and the depressed portion of bone raised, but he never fully recovered his power of speech, although his intelligence increased, so much so that he put his tongue out when told to do so, and appeared to take an interest in things around him. His fæces, however, passed involuntarily from him, and his urine had to be drawn off by a catheter. Four days after the operation he had a chill, which was very slight, and not repeated. But his symptoms became again worse, and he gradually relapsed into a comatose state. Just before his death, on the morning of the 22d, abscesses formed about his ankles, which discharged pus and a quantity of fetid gas. Upon making a post-mortem examination, the brain was perceived to be much softened, and a large abscess existed immediately beneath the point at which he had been trephined. The fracture was found to extend down to the base of the skull, involving the sphenoid and temporal bones.

Metastatic Abscesses of the Liver following an Injury of the Head.—DR. HALL next exhibited for DR. HUTCHINSON, a liver with several abscesses, from the body of Edward Morris, aged fifty-seven years, seaman, who was admitted into the Pennsylvania Hospital on Thursday, the 2d of September, with a contused wound of the scalp over the left parietal bone, and one on the same side of face, beneath the orbit. Neither appeared to be serious, and there was nothing in his condition to occasion any alarm until Sunday, September 19th.

On Friday he complained of pain in his head, but this was not sufficient to confine him to bed. On the same day he had a chill, which, as he formerly suffered from an intermittent, was attributed to that cause.

On Saturday he complained of pain in his abdomen, which was relieved by a mustard plaster. He had an old rupture, but there was no reason to suspect any strangulation.

Finding on Sunday that the patient had retained his water, about f℥iv of a yellowish liquid was drawn off, which did not possess, in the slightest degree, the smell of urine.

On Monday a little blood was discharged through the catheter. During Sunday night and Monday, he had spasms of the muscles of the right side of the body, and in a less degree of the left side. He died on Tuesday morning at two o'clock; the autopsy was made on the same day at 2 P.M.

There was no fracture of the skull, but immediately beneath the spot upon which he had been struck was a deposit of pus, and within the membranes a deposit of lymph. The brain was very much congested. In the liver several abscesses were detected, and in the kidneys some pus. The bladder was very much contracted, and contained clots of blood.

This specimen led to an animated discussion, mainly carried on by Drs. Keating, Hewson, and Woodward, in which the different prevalent theories concerning the formation of metastatic abscesses were reviewed.

Tubercles in the Peritoneum and in the Liver.—The Secretary presented, for DR. H. LENOX HODGE, a specimen of tubercular peritonitis, with the subjoined history:—

Patrick Bannon, aged fifty-four years, a native of Ireland, was admitted into the Pennsylvania Hospital on the 6th of August, for dropsy. He could not give a very accurate account of his disease, but stated, in reply to our questions, that until he had taken this affection he was well as anybody, that he had not been able to work since spring, that now he could eat nothing, and was obliged to drink all the time. Upon examination, the abdomen was found tense, but not very much distended; fluctuation, although not very evident, could be detected; there were vague pains throughout the part, especially on motion; the urine contained no albumen, and showed no evidence of disease; the heart appeared healthy upon percussion and auscultation; the liver certainly was not enlarged, and perhaps did not cause dullness over quite as large a space as usual. After noticing these symptoms, Dr. Gerhard said that the case was probably one of chronic peritonitis. Under the influence of diuretics, such as cream of tartar, juniper berries, squill, and digitalis, the dropsical symptoms lessened and soon disappeared. After a time, upon the application of counter-irritants, the pains left the abdomen. Thus the patient became more comfortable; but he had no appetite, and he grew more and more emaciated. A slight cough that he had had before entering the hospital increased; evidences of tubercles and cavities were detected in the lungs; and gradually becoming weaker and weaker, he died yesterday, (the 21st,) in the morning.

Autopsy.—The lungs contained tubercles at the upper portion, especially of the right lung, where there was a cavity, and also one at its very base. There were very few pleuritic adhesions, and these chiefly at the lower portions. The heart was healthy, the pulmonary arteries considerably dilated. Upon opening the abdominal cavity, the peritoneum was found much thickened, and the abdominal walls everywhere studded with tubercles; the mesenteric glands were much enlarged. Liver about the normal size, but containing, in the left lobe especially, tubercles. Kidneys were healthy. The spleen contained tubercles in its capsule, though not in its substance.

Ulcer of the Stomach.—DR. KEATING presented a specimen of perforating ulcer of the stomach, and gave the following history:—

Mrs. L., aged fifty-one, of sallow complexion and spare habit, had consulted me at various intervals during the last four years, in reference to a pain which she now and then experienced over the cardiac orifice of the stomach. She occasionally suffered from violent pyrosis, cardialgia, and other symptoms of dyspepsia, and became at times exceedingly emaciated. Having in connection with this pain constant palpitations of the heart, she was convinced that her affection originated from some cardiac disorder. During the month of February last, she was occasionally troubled with rejection of her food about an hour after eating; but this, as well as her other dyspeptic symptoms, yielded rapidly to treatment.

In March last, I was sent for in haste to visit her on account of a profuse vomiting of a chocolate-colored fluid, in all about a pint and a half. I submitted a portion of this fluid to my friend Dr. Da Costa for an examination under the microscope; he reported the existence of broken-down blood corpuscles in abundance, sarcinæ ventriculi, and mucous membrane in a state of degeneration. This hemorrhage had been preceded by a great increase of pain over the left side, corresponding with the cardiac orifice of the stomach. Upon careful examination, I could not discover the existence of a tumor in any portion of the stomach or abdominal cavity. The hemorrhage soon yielded to treatment, but it was followed by a constant rejection of the food taken during the day. Sometimes the vomiting occurred two hours after each meal; at other times twelve hours would elapse without any rejection of food, and then suddenly about daybreak profuse emesis would take place, bringing up in a partially digested form the engesta of several meals. This state of things continued with but little variation for four weeks, although at times the symptoms would lull, and apparently yield to treatment, so as to induce hope that the disease might be cured. At one period she was nearly three weeks without vomiting, and began to gain flesh. Another hemorrhage set in, and was followed by the previous train of morbid symptoms.

Her appearance at times indicated so strongly a malignant disease, that Dr. Pepper, who visited her in consultation, feared with me that the ulceration might be malignant, especially as she had had a sister who died of scirrhus of the rectum. These fears, however, were dispelled by our examination for a tumor, no traces of which could be detected. The pain continued over the left portion of the stomach, the vomiting increased, until, on the 16th of the last month, symptoms of perforation set in, and death followed in twelve hours.

Post-mortem examination revealed a healthy state of all the organs save the stomach ; in which was found, about an inch from the cardiac orifice, on the greater curvature, a perforated spot, with thick indurated edges; about half an inch from this ulcer there was a partial softening of the stomach, and evident signs of another ulcer forming. The remaining portions of the stomach were in a healthy condition. An examination of the ulcerated part by Dr. Da Costa, under the microscope, gave no evidence of malignant disease; and hence, although situated near the cardiac orifice and along the greater curvature, the disease was undoubtedly a chronic perforating ulcer, with a constant deposit on its edges during the gradual process of perforation.

The death in these cases usually ensues from hemorrhage, emaciation, or perforation. In her case the hemorrhage was always immediately controlled by the tincture of the perchloride of iron; the emaciation was not excessive, for at the post-mortem examination large deposits of fat were found under the abdominal muscles, and in different portions of the abdomen. In reflecting upon the therapeutics of such cases, I believe that the greatest chances of success are to be found in a continued opiate treatment, with an allowance of just sufficient nutriment to support life; the stomach might thus be placed in the condition of throwing out bands of lymph, and of protecting itself from perforation and effusion of its contents. Undoubtedly such a method of treatment affords more hope in the chronic perforating ulcer, than in the acute with its sharp edges.

The question which presents itself for solution is, whether these ulcers are simple local lesions, or whether they may be a local expression of a general cachectic condition of the whole system? In this case, a point of interest lies in the fact that the patient was of an age at which ulcer of the stomach is certainly not often met with; nor is, indeed, the disease in this country at all frequent. Judging from the few cases which have been reported, its occurrence must be far rarer than in England, or on the Continent of Europe.

American Progress of Medical Science.

REPORT ON MATERIA MEDICA AND THERAPEUTICS FOR THE YEAR 1857.

By JOHN BELL, M.D.

PART II.

ALTERATIVES.

THE term alterative, for a particular class of medicines, furnishes a strong proof of the difficulty of classifying the articles of the Materia Medica, with a view of designating their therapeutical uses. Every remedial agent, whether medicinal or hygienic, is an alterative, since it causes some change or alteration in the organism. Commonly, however, we restrict this title to a substance which produces no immediate or physiological effect, such as purging, sweating, augmented sensibility, or mobility, but which brings about a gradual and salutary change, the only measure of which is in the ultimate restoration of the altered organ and deranged function to their normal states. But we cannot be said to have a class of medicines whose action on the animal economy is solely alterative; for, if taken in larger doses, most of them show other effects, and their affiliation with articles under another class. There is this advantage, however, in admitting the title of alterative with the signification usually attached to it, viz.: that the use of such an article saves the organism from the perturbing and not seldom damaging influence of the more heroic modes of treating diseases; at the same time that opportunity is allowed for nature, through the substantive form of the common agents of hygiene, to display her restorative powers. For our present purpose, we shall find it convenient to make use of the term "alteratives," not as an appropriate one to head a natural class, but as a string on which to hang our diverse items of therapeutical results—like so many parti-colored beads—which would otherwise be lost or hard to find at the moment when we wished to make use of them.

Podophyllum and Leptandria.—Dr. R. E. Haughton, of Indiana, in a paper, under the head of "New Remedies," (*Nashville Journ. of Med. and Surg.*, Feb. 1857,) tells us, that, with a view to save his patients from the harsh operation of calomel, including, at times, ptyalism, he resolved on trying substitutes milder in their operation, but equally efficacious in procuring the desired relief. He continues:—"There are cases which will not bear a blue pill without its specific action and in those cases I found that podophyllum, combined with leptandria, in the proportion of half a grain of the former to three or four grains of the latter, is a most reliable and efficient alterative, producing no nausea, pain, or unpleasant symptoms, and may be given in proper quantities, regulated (by the age of the patient) to all ages, from the infant to adult age, having no fear of any specific action set up in the glandular system, and of course evading the prostration consequent upon such conditions." The minute dose of the first of the articles here prescribed, coupled with the previous remarks of Dr. H. on the active principle of the *Podophyllum Peltatum*, (May apple,) having been obtained by Mr. Hodgson, of this city, and by him called podophyllin, leads us to believe that the author means this latter, instead of podophyllum, in the above prescription. The leptandria, which forms the other component part, is the active principle of the *Leptandria Virginica*, sometimes called Culver's physic. "It is an excellent alterative alone, producing augmented biliary secretion, and thus becomes a valuable adjunct to other remedies in the treatment of disease."

Iodide of Potassium for the Cure of Syphilis.—Dr. C. T. Bonsall, of Trenton, New Jersey, (*Med. and Surg. Reporter*, April, 1857,) relates the history of a case of syphilis in a married female, in which the use of iodide of potassium was eminently successful. The disease was of four years' duration. There was ulceration of the neck of the uterus, and continued discharge from the os tincæ; discharge from the urethra; inflammation and ulceration of the mouth and throat; nodal formations and rheumatic pains. Injections of ℥ij. of protosulphate of iron dissolved in a pint of water, were thrown up the vagina repeatedly, and five grains of iodide of potassium were given three times a day, with twenty [minims?] of wine of colchicum. On the 6th day the quantity of the iodide was doubled. On the 12th day, congestion and dryness, accompanied by pain of the conjunctiva, bronchial and nasal mucous membranes, commenced, all of which passed away with catarrhal discharge. On the 21st day, fifteen grains of iodide of potassium were added to the former allowance, and from this time her disease disappeared rapidly. During the first week in May her menses returned; she was becoming quite fleshy, and seemed wholly cured of her disease. The treatment by Dr. Bonsall had been begun on the 22d of February.

This poor woman might be supposed to have suffered enough, but it was ordered otherwise. The graceless husband communicated to her fresh disease in the last week of August. Dr. Bonsall, on being called in, found indurated chancres in the vagina, internal labiæ, and in the orifice of the urethra. Several buboes had begun to develope themselves on the groin. The chancres were immediately destroyed by caustic, and the eroded surfaces healed promptly; but there now commenced a rapid and fearful development of secondary syphilis. We omit the details, to pass to the treatment—administration of the iodide of potassium—which was again successful. At the beginning, thirty grains of the iodide were given daily in three portions, taken in half a pint of hop tea. Veratria was substituted for the wine of colchicum, which was found to act too freely on the bowels. "On the 15th of October she was taking sixty grains of iodide daily, and half a grain of veratria; but the disease was still progressing. On the 25th the dose reached a hundred grains, and three-fourths of a grain of veratria. On the 1st of November she was taking one hundred and twenty grains of the iodide, and a grain of veratria. About the 6th, iodism began; a profuse secretion of tears, sneezing, and an undue quantity of saliva thrown out by the salivary glands, told that the limit had been reached, beyond which it was not safe to give iodine." The disease had now yielded in every part. After the 25th, the dose of iodide was gradually diminished, and left off entirely in the latter part of December. The general health of the patient rapidly improved, and she gained flesh.

Iodide of Potassium Injection in Leucorrhœa.—In the *New Orleans Med. and Surg. Journ.*, a solution of the iodide of potassium, ʒiss., to ℥viii. of pure water, has done good service, in the form of injections, which are to be introduced into the vagina three or four times a day. We would recommend as an adjuvant to this treatment, and also as often a preventive, and sometimes itself curative, regular twice daily injections of castile soap and water into the vagina.

Chlorate of Potash Injections in Leucorrhœa and Ulceration of the Os Uteri.—Dr. Bedford Brown, of North Carolina, gives an account of two cases (*Am. Journ. Med. Sci.*, July, 1857) in which he used injections of the chlorate of potash in solution, ʒj., to ℥viii. of water, as an injection in the above diseases, with the best results. The injection to be used twice daily. Dr. Brown mentions a case of gonorrhœa in a female cured by the same remedy.

Chlorate of Potash in Mercurial Stomatitis.—Additional evidence in favor of this treatment is furnished by Dr. Gallaher, one of the physicians of the Western Pennsylvania Hospital, Pittsburg, (*American Journ. Med. Sci.*, July, 1857.) "Judging from past experience, (says Dr. G.,) I now, with the use of this salt, can remove a mercurial disease of the mouth in from six to ten days, which, under any other proposed plan of treatment, would last from four to six weeks." His method of treating the patient is as follows: "He is placed in a warm and comfortable apartment, and made to live on gruel. I then order him ten grains of the chlorate of potash, dissolved in a tablespoonful of cold water, three or four times a day, according to the severity of the affection. Should there be ulceration of any portion of the mucous membrane of the mouth, I direct a weak solution of the salt to be applied to the denuded part several times a day; generally, nothing else is required, the cure being accomplished in a few days."

In *Stomatitis Materna*, Dr. Faulkner (*Virginia Med. Journ.*, December, 1857) speaks very highly of the chlorate of potash.

Nitrate of Silver in Catalepsy.—A singular case of this disease was treated successfully by Dr. Wm. R. King, of Louisburg, N. C., (*Am. Journ. Med. Sci.*, January, 1858.) in the month of May, 1857, by the use of the nitrate of silver. The tonic spasm and fixed rigidity of the limbs would be brought on by pressure on the nape of the neck, where there was considerable tenderness, also on the crown of the head, over a space about the size of the palm of the hand. Sweeping the floor, patting the feet, sawing wood, and all harsh or grating sounds, from whatsoever cause proceeding, had the same effect. The treatment adopted by Dr. King, was chiefly to administer one-quarter of a grain of the nitrate of silver three times a day, and gradually to increase it to a half grain; and also use counter-irritation with strong croton oil liniment over the tender vertebræ. Under these means the patient entirely recovered from all nervous disorders. Headache, or cerebral disturbance, was met by small doses of blue mass, followed by a saline cathartic or castor oil. The strength and general health were to be improved by some mild chalybeates.

Iodine in Ovarian Tumors.—Dr. Roemaer, of Otter Bridge, Va., relates (*Am. Journ. Med. Sci.*, April, 1857) his successful treatment of ovarian tumor by the use of iodine, both internally and externally. His formula for the former was—℞. Iodin., ʒi.; Iodid. potass., ʒij.; Aquae. destillat., f℥vi.—♏. Dose, a dessertspoonful four times a day. A pretty strong dose of iodine to be thus repeated—rather more than three grains, or twelve grains in a day. The external application was made by painting the surface of the abdomen, "between the pubes and the umbilicus, to the left, toward the groin, twice daily." In the second case the compound tincture of iodine was given in tablespoonful doses, four times daily—equal to twenty grains of iodine in the course of the day. In the four cases thus treated, the ovarian enlargement was entirely removed by the means just designated.

Nitric Acid in Pertussis.—Dr. Charles Witsell, of Cheeha, South Carolina, gives an account (*Charleston Med. Journ. and Rev.*, January, 1857) of his success in treating pertussis by the use of nitric acid, as recommended by Dr. McNally, of Tennessee. He administered it sweetened, and diluted so as to resemble lemonade: of this, the nurse was directed to give the patients as much as they could drink.

Creasote in Dysentery and in Cholera Infantum.—Dr. Wm. H. McMate, of Arkansas, lauds (*Southern Med. and Surg. Journ.*, October, 1857) the curative powers of creasote in dysentery; but with what justice, may be inferred when it is known that the formula which he is in the habit of using, and on which he relies so much, contains a good share of morphia in addition to the creasote. It is as follows:—℞. Creasote, gtt x.; Acetic acid, gtt xx.; Morphine sulp., gr. ii.; Water, pure or distilled, ℥i.—♏. Of the above solution, the author is in the habit of giving "to an adult, a teaspoonful every two or three hours, until it checks the blood and mucus in the evacuations from the bowels." It will be seen that the patient takes, at each dose, a quarter of a grain of the sulphate of morphia, which, of itself, must count largely in the therapeutic agencies enlisted on the occasion. We find, moreover, on reading the histories of the cases treated by Dr. McMate, that calomel and Dover's powder, "in broken doses, were prescribed in alternation with the creasote."

Dr. W. K. Bowling, in the *Nashville Journ. of Med. and Surg.*, Aug. 1857, after alluding to Dr. Elliotson's recommendation, made many years ago, of creasote as a remedy for nausea and vomiting dependent on irritation, tells us that he holds this medicine to be superior to the means usually employed in acute cholera. His customary prescription is—℞. Mucilage of gum arabic, ℥ij.; Creasote, gtt iii.—♏. A teaspoonful every six hours.

Nitrate of Potash and Cold Water Enemata in Dysentery.—Dr. Henry Tiedemann, of Philadelphia, in a small tract "on Dysentery and its Treatment, 1857," dedicated to the College of Physicians, gives his views of the pathology of the disease in some detail, and then proceeds to an enumeration of the remedies which are had recourse to by different physicians. He ends with a declaration of his confidence in the superior therapeutic value of nitrate of potash, or, as he terms it, "*nitrate of potassium*, (kal. nitr.)" Dr. Tiedemann tells us that he has given this salt in large doses, but he fails to make any specification of quantity, and mode, and intervals of its administration. The tract contains no clinical details, no history of a single case. *Locally*, he orders "immediately after each evacuation, no matter how often they occured, injections of pure cold water." These he continues until the tenesmus ceases, which in the majority of cases happens in from six to twelve hours: "as the tenesmus diminished, the mucus and bloody evacuations also diminished, and when it ceased, they generally disappeared entirely." For diet he orders "milk, gruel, barley, rice-water, toast and water, and pure water—buttermilk, as much as the patient liked to take."

He looks to the state of the digestive organs, with a view to ascertain whether an emetic or a purgative be required before nitre is administered. "If, during the treatment with nitre and the injections of cold water, evacuations of fecal matter did occur, at least once in twelve hours, which usually was the case, I recommended a corresponding dose of castor oil." Dr. Tiedemann asserts that this treatment is applicable, "in the two first stages of the disease, to every age, sex, constitution; every mode of living, in every epidemic, every season, every so-called species of the disease." After this strong, unqualified claim of entire success under every possible contingency, the reader must feel somewhat surprised at the author's admitting that he is "not acquainted with the tropic, cramp, and so-called other dysenterics, except from reports,"—a tolerably large drawback thus it seems to us, from the validity of a position assumed in so unqualified a manner.

When the dysentery proper has disappeared, which in his hands is often accomplished in twelve hours, he gives a solution of sulphate of quinine, and on the third day often allows a better diet to the patient; the injection is to be continued, after each evacuation, for a few days longer; and if regular evacuations do not take place, castor oil is to be taken from time to time. In very severe cases, particularly in hot weather, he orders "ice water to be injected after each dysenteric discharge, which relieved the patient almost immediately."

The author of the tract defines the third stage of dysentery, over which he does not assert control by his favorite treatment, to exhibit "extensive and deep ulceration of the mucous membrane, and undermining ulceration of the submucous tissue. *Discharge.*—Blood mixed with pus, shreds of necrotic cellular tissue, and ichor."

Phytolacca Decandra—Poke Root—in Granular Conjunctivitis.—The readers of the *North American Med. and Chir. Review*, Jan. 1857, need scarcely be reminded of the valuable paper of Dr. C. S. Fenner, of Memphis, Tennessee, on granular conjunctivitis, and of the high opinion which its author entertains of the phytolacca, in the form of tincture or of strong decoction, in this disease.

Dr. Parry, of Indianapolis, had, at a previous period, made use of the poke root in the case of a patient suffering under rheumatism conjoined with conjunctivitis. In a short time both diseases yielded to this treatment.

Oxide of Zinc in Night Sweats.—Dr. S. J. Abbot, of Boston, communicates, in *Boston Med. and Surg. Journ.*, April, 1857, the results of his numerous observations on the excellent effects of the oxide of zinc in night sweats. He adopts the prescription given by Dr. Theophilus Thompson in the *London Lancet* for October, 1854, viz.: four grains of the salt to three grains of extract of conium or of hyosciamus, to be given in two pills, which are to be taken at bedtime. Dr. Abbot has so much confidence in the remedy, that he always prescribes it first in preference to any other, and he rarely meets with disappointment. He introduces a synopsis of no less than twenty-three cases, in which he gives a condensed statement of the auscultatory signs in each, the duration of the disease, &c., so as to show the stage of the latter at which the remedy was administered. The remedy had been well spoken of a year or two before, by Dr. J. B. S. Jackson, and by Dr. Wm. E. Coale. The cases recorded by Dr. Abbot are all, with two or three exceptions of phthisis. Dr. Jackson, in afterwards adducing his own experience in confirmation of Dr. Abbot's, adds, that he has found the remedy equally serviceable in sweating in other diseases besides phthisis; as in intermittent fever, for instance. We once suffered from this occasional sequela of this fever: it was either removed, or wore itself out by continuing to use the bark, with the addition of elixir of vitriol.

Some substitute for the narcotic extracts already mentioned the extract of belladonna, in a dose of two grains, combined with four of oxide of zinc.

Dr. E. J. Coxe, of New Orleans, thinks most favorably of the sulphate of zinc according to the formula prescribed by Dr. Barlow, (Practice of Medicine,) viz.: one grain united to four of the extract of hyosciamus, to be made into a pill, and taken every night at bed-time.

Iodide of Potassium in Asthma.—A writer in the *Boston Med. and Surg. Journ.*, October, 1857, over the initials of C. S. S., tells of his having employed the iodide of potassium in a number of cases of asthma, without having been disappointed in its efforts in a single case. As far back as 1847, Dr. Casey, as we learn from this writer, in an article in the *Boston Journal*, speaks in laudatory terms of "the unequivocal and decided relief obtained from exhibiting this medicine." From the same source we learn that there is a patent medicine manufactured in Boston, and sold wholesale and retail by druggists of that city, which has obtained a reputation as a specific in asthma. An analysis of a bottle of this, by C. S. S., showed that iodide of potassium was one of its chief ingredients.

"*Head Matter*" *and Cacao Butter as Substitutes for Cod-Liver Oil.*—Dr. G. P. Camman, of New York, in a note addressed to the editors of the *New York Journ. of Med.*, January, 1858, directs attention to the oily substance taken from the cavities of the head of the spermaceti whale, known in commerce as the "head matter." In summer it presents the appearance of oil, with a copious white fleecy sediment; but in winter, when chilled, it resembles imperfectly frozen ice cream or beef drippings. It may be obtained from the manufacturers of sperm candles, and should be used while fresh, (in its crude state as landed from ship board,) for it becomes rancid by being kept. It is preferable to cod-liver oil on account of its being more agreeable to the taste, leaving a pleasant flavor in the mouth, and also from its being more nutritive and soothing. It is less apt to disagree with the stomach, and does not cause offensive eructations. The patient may take it either pure, in coffee, or with bread, boiled rice, potatoes, &c. When required, paregoric and syrup of the iodide of iron may be added.

A correspondent of the *Boston Med. and Surg. Journ.*, October, 1857, recommends cacao butter,—a solid oil, yielded in very large amount by the cacao-nut,—as a substitute for cod-liver oil. The suggestion was made, originally, by Dr. C. J. B. Williams, of London.

Electro-Magnetism in Amenorrhœa and in Chronic Rheumatism.—Dr. E. P. Christian, one of the assistant editors of the *Peninsular Journ. of Med.*, in a report at the annual meeting (1857) of the Michigan State Medical Society, on "some of the therapeutical applications of electro-magnetism," gives a case of amenorrhœa of several months' duration, associated with inveterate ague, in which the recovery was complete by the daily use of this agent for about a month.

A case of "an anomalous form of chronic rheumatism" was cured by the same means, between the 2d of April and 1st of May. We shall soon have to speak of this remedy, directed by the same hand, in intermittent fever.

Esquimaux Treatment of Frost Bites.—Under the present heading of "Alteratives," we may as well notice the above-named treatment, which is conducted by poor savages on as philosophical principles as might be supposed to emanate from any College of Physicians. Dr. Hays, the companion of Dr. Kane, in the last Arctic voyage, was the narrator, before the Ohio State Medical Society, at its meeting in Sandusky, June, 1857.

Dr. Hays gave a case coming under his own notice. "An Esquimaux had his leg frozen above the knee, stiff, colorless, and, to all appearance, lifeless. He was placed in a snow house at a temperature of 20° F. below zero. The parts were then bathed with ice-cold water for about two hours, then enveloped in furs for three or four hours. These frictions were used first on the feathery side of a bird skin, then with snow, alternately wrapping the limb in furs, and then rubbing it for nearly twenty-four hours. It was then carefully wrapped up, and the temperature of the snow house elevated by lamps above zero. On the third day the patient was taken to his house, (where they often have a temperature of 70° or 80° F.,) and in seventy hours he was walking about, with only a slight frost bite on one of his toes."

Fluid Extract of Pareira Brava in Enuresis.—The *New Orleans Med. News and Hosp. Gaz.* for July, 1857, quotes from the *Southern Journ. of Med. and Phys. Sci.*, a notice of a case of "piss-a-bed" in a young man twenty-five years of age, in which the fluid extract of pareira brava, in doses of a teaspoonful, three times a day, acted, to use the words of the patient, "like a charm." He was entirely relieved after taking a few doses.

PURGATIVES.

Podophyllum Peltatum—May Apple.—One would hardly look for a knowledge of the doings of the Western Clinical Infirmary of Philadelphia in a medical journal, published in Keokuk, Iowa, and yet such is the fact. What follows may be read in connection with the remarks of Dr. Haughton on the alterative properties of podophyllin, in a preceding article, under the head of "Alteratives."

The reporter in the present case is Dr. William H. Letherman, then Resident Physician at the Infirmary. He "tried and experimented [with the podophyllin] during the last six months upon 400 patients, and always with the same result, as to its utility and beneficial action on the economy, in which hitherto the hyd. chlor. mit. was employed." He relates the case of a man, aged 25 years, who had suffered much from intermittent fever, and who, when he came under treatment, felt great pain, on pressure, over the region of the liver; his spleen was also enormously enlarged. The treatment consisted in the application of scarifying cups on two different occasions, and leeches at another time over the region of the liver. With these was conjoined, on the first day, the administration of podophyllin, in a dose, morning and evening, of half a grain, mixed with a quarter of a grain of carbonate of potash. No person can accuse the prescriber of giving too large a quantity of the latter article, added by him to correct acidity of the stomach, which prevents, we are told, the podophyllin from acting on the liver. No grounds are given for this opinion. The bowels were opened freely during the night, but we are not told how many of the four powders prescribed, each of them being of the strength just mentioned, were taken. On the following day, Dr. L. prescribed two grains of podophyllin and one grain of opium, with ten grains of sugar, to be divided into four powders; of which one was to be taken three times a day. No report is made of the effect of the powders on the bowels, except that we are told, three days later, "the bowels not being operated much, and the head remaining heavy, dull ache across the frontal region," a new prescription was filled up, consisting of podophyllin ten grains, carbonate of potash two grains, white sugar ten grains: the compound to be divided into twenty powders, one to be taken three times a day. We learn that two days afterwards, the patient "was able to be up, and says that he feels like a new man;" the right side free from pain; has no headache; bowels open three times a day; the discharges very dark and fetid; the liver reduced almost to its normal size. The subsequent treatment consisted in the application of tincture of iodine over the region of the liver and spleen for eight days—and the use internally of nitro-muriatic acid, in doses of 10 drops three times a day.

The reader will be struck with the singularly minute dose, approaching to the homœopathic, of the carbonate of potash, prescribed by Dr. Letherman; and he may ask: whether this is a case to illustrate the curative powers of the podophyllin?

Cathartics in Dysentery.—Under this title, Dr. O. C. Gibbs, of Frewsburg, N. York, communicates his ideas on the subject, in the *Buffalo Medical Jour-*

nal for Jan. 1857. The gist of his paper is a recommendation of the super-sulphate of magnesia in dysentery. The formula which he uses is that given by Dr. Dorsey in the June number of the *Western Lancet*, 1855, and which was recommended to the latter by Dr. Lemoyn, of Washington, Pa. It runs as follows:—Take of saturated solution of sulphate of magnesia *seven fluidounces;* aromatic sulphuric acid one fluidounce. Mix. The saturated solution is made by dissolving Epsom salts in an equal quantity of water, at 60° F. It will be ready for use in eight or ten hours. It should be shaken occasionally. The medium dose for an adult is one tablespoonful, in two or three ounces of water, every four to six hours, until it gently moves the bowels. Dr. Gibbs directs this dose to be taken in the morning, and repeated every three hours until it operates. Both Dr. Dorsey and Dr. Gibbs advise that a small quantity of morphia—the former says a sixth of a grain—shall be given at the same time with the saline solution. This course is repeated daily, as long as it is indicated. During the remainder of the twenty-four hours, Dr. Gibbs gives ipecacuanha with morphia, or such other remedies as the circumstances of the case require.

DIURETICS.

Croton Oil in Dropsy.—We step across the border to chronicle the success of Dr. J. L. Stevenson, of Stratford, Canada, in the cure of dropsy with croton oil. (*Med. Chron.*, or *Montreal Monthly Journ.*, Nov. 1857.) In the first case, one of acute anasarca, half a drop of the oil was directed every morning. After the second dose, the swelling began to abate, the urine increased in quantity, and the dyspnœa entirely disappeared. On the ninth, the patient, a female, aged 30 years, was quite well. The second case, that of a boy aged six years, was of anasarca after scarlatina, and then catching cold. The croton oil was given in one-third of a drop every morning. The patient was quite well at the expiration of two weeks' treatment. Dr. Stevenson believes that the effects of the croton oil are due more to its stimulating the absorbents than to its drastic properties, "for in the first case it only caused three or four evacuations every morning, and in the second never more than two; and I may state (he continues) that in neither of the cases did the oil cause any griping."

FEBRIFUGES.

THIS title, which designates the therapeutical operation of a certain class of medicines, might seem to be preferable to those derived from changes wrought in the functions, and which, resting on a physiological basis, indicate an increase or diminution of the various secretions and excretions, and an excited or obtunded sensibility. But the title, while it designates an object to be attained, viz., the removal of a pathological state called fever, indicates no similarity, harmony, or natural affinities among the substances or agents, by the use of which we hope to reach this object. Thus, for instance, blood-letting is a febrifuge; so also is blistering, and so are the cold-bath, and the vapor and warm-bath, and opium and simple sedatives, and salines and tonics—between no two of which is there community of physical and chemical characters, and of immediate physiological operation. Still, we may speak of febrifuges, as a term, helping us to arrange in our memory a series of medicinal agents the knowledge of which has been furnished by experience, but which no *à priori* reasoning or scientific aid could have enabled us to throw into one group.

There are but few febrifuges for us to notice on the present occasion, and they are of doubtful value. Under the class of Sedatives, the veratrum viride was mentioned by some of its more sanguine advocates as a febrifuge of undoubted power. After what we have already said, it is not necessary to recur to this topic.

Chlorate of Potash in Typhoid Fever.—Dr. V. C. Taliaferro, of Atlanta, Georgia, in the *Medical and Surgical Journal* of that city, for March, 1858, strongly advocates the use of chlorate of potash in typhoid fever. As his paper does not come within the year (1857) of our review, we ought, perhaps, to restrict ourselves merely to noticing it in connection with, and in corroboration of, the opinion advanced on the same subject by Dr. E. C. Ellet, of Illinois, in the *North-West. Med. and Surg. Journ.* for March, 1857.

Dr. Ellet was led to a trial of this salt in typhoid fever by his experience of its efficacy in mercurial stomatitis, and, subsequently, in the case of his own child, who was greatly and alarmingly reduced by remittent fever, and to whom he gave the chlorate on account of sore mouth, fetid breath, &c. The recovery from the fever was complete. Dr. E. finds that the best and most reliable dose for an adult, in typhoid fever, is twenty grains every four hours, without interruption, so long as febrile symptoms continue or much sordes remain on the teeth and gums. Might not another condition have been added by the writer for persisting in its use, viz., until it obviously failed either to arrest the fever, or materially to abate it? The chlorate "possesses decided diuretic powers, always causing a free flow of limpid urine."

Dr. Taliaferro usually combines veratrum viride with the chlorate, as in the following formula:—℞. Chlorate of potash, saturated solution, f℥iv.; Tinct. of veratrum viride, ʒss.—♏. Of this the patient is to take a tablespoonful every three hours through the day, with an opiate at night.

Dr. Jas. Morrison read (Dec. 17th, 1857, before the "Pacific Medical and Surgical Association") a paper on the use of the chlorate in typhoid fever. He refers to Dr. Chew, as using it in this disease, in the Baltimore Infirmary, ten or twelve years ago. In the year 1847, Dr. Morrison, Resident Physician of that Institution at the time, saw seventy-two cases of typhoid fever, two only of which had a fatal termination.

Diluted Acetic Acid in Scarlatina.—Dr. B. F. Schenck, of Lebanon, Penna., gives his experience in the use of diluted acetic acid in scarlatina, as previously recommended by Dr. J. B. Brown, London, 1846. Dr. S. begins by presenting the contrasted results of the common method of treating the disease, and of the practice by administering the acid. The first exhibited a mortality of 1 in 8½ to 9—the other was 6 deaths in 60 cases. All this occurred in the same epidemic, nor was there any abatement of its violence during the period of the acid treatment. Neither Dr. Brown nor Dr. Schenck trust to the diluted acetic acid alone. Cauterization of the throat, rubefacients externally, an aperient of calomel, followed by castor oil, precede the use of the acid, in the simple variety of scarlatina. In the anginose or malignant, the same remedies are to be had recourse to, with the addition of freer cauterization, and resort to stimulants—brandy or port-wine every four to six hours, with arrow-root, beef-tea, or mutton-broth; morphia at bed-time; or, whenever restless, sponging with tepid water and vinegar. So far Dr. Brown. Dr. Schenck was still more free in the use of stimulants. He administered brandy in graduated doses, two or three times a day, *from the beginning* of the malignant form, or on the second or third day in anginose cases. In a case of cardiac disease, (pericarditis,) occurring in malignant scarlatina, blood-letting was resorted to with advantage. When this remedy is employed, it ought to be followed immediately by diffusible stimuli.

The acid mixture prescribed by Dr. Brown consisted of distilled vinegar, diluted, by the addition, to one part of this liquid, of seven parts of water; of which one ounce is to be united with half an ounce of syrup and four ounces of distilled water. Dose, two tablespoonfuls every four hours. "This mixture is to be continued throughout the entire duration of the case, and for one or two weeks afterwards, or until the desquamation is well over." The wine and brandy may be given even in the febrile stage without any harm resulting, when they are combined with the acid. Dr. Schenck directs "the strength of the acid to be increased according to the violence of the attack; in bad cases giving it as strong as the patient can bear it."

Antiperiodics.

The chief one of our antiperiodics, quinine, or, more properly speaking, Peruvian Bark, is also our great febrifuge, and it might, together with others of the present class, rank under this head, were they not used under other circumstances of morbid periodicity without fever.

Nitric Acid in Intermittent Fever.—Dr. J. C. Thompson, of Roseville, Arkansas, (*Southern Journal of the Med. and Phys. Sciences*, August, 1857,) relates his successful trials of nitric acid in six cases of intermittent fever, in all of which the customary remedies had been used without curing the disease. In three of the cases, pills of sulphate of iron, aloes, and rhubarb were given in addition to the acid. In two others, blue mass was prescribed in conjunction with the acid; and in one case in which there was much menorrhagia, a powder, consisting of one grain of opium and two grains of sugar of lead, was given every two hours till the discharge .subsided. The formula for the diluted acid is one ounce in six ounces of water; of this, the patient is to take one drachm in an ounce of water every two hours during the intermission, and also the pills as above.

Dr. Thompson recommends, as a prompt and permanent antiperiodic, the following:—℞. Nitric acid, f℥i.; Water, f℥vi.; Sulphate of quinine, grs. xxviii—♏. The dose is not stated. It is probably the same as that of the diluted nitric acid mentioned above.

The Committee of the Ohio State Medical Society recommends a fair and impartial trial to be given of the nitric acid and sulphate of cinchonia, in intermittent fever. The Chairman has had considerable experience in the use of the acid, since his attention was first called to it by Dr. Mendenhall, of Cincinnati, in 1854. In 35 cases out of 36, the acid was, in his hands, successful.

Sulphate of Cinchonia.—This salt has of late engaged a good deal of the attention of physicians, as a substitute for sulphate of quinine in the treatment of periodical fevers. Dr. J. M. Brannock, of Tennessee, (*Nash. Journ. of Med. and Surg.*, May, 1857,) states that, during the past season, he administered it in upwards of thirty cases, with results far exceeding his anticipations. The quantity given in a day varied from 20 grains to 2 grains, thrice in this period: the common dose was, at first, 4 grains, afterwards 2, at stated intervals. Dr. Brannock never saw the use of the sulphate of cinchonia to be followed by "the disagreeable head symptoms which render quinine, especially in large doses, so unpleasant in many cases."

Dr. Black, in "Remarks on the Causes and Treatment of Intermittent Fevers," (*West. Lancet*, Aug. 1857,) speaks well of the sulphate of cinchonia "when given in full and sustained doses, four grains every three hours until twenty-four are taken." The chief symptom, from its use, observed by Dr. Black, was a sense of cerebral fulness, with a strong somnolent tendency; and this only when given in unusually large doses. Dr. Black has directed, with advantage, a combination of the sulphate of cinchonia and chinoidine, as follows:—Six grains of the former to eighteen of the latter, together with ten or twelve drops of impure oil of black pepper, divided into twelve pills—two to be taken every two hours, beginning twelve hours before the expected chill.

Asclepias Syriaca? The Root of Man—T. Plant—Milk Weed.—Dr. Richard S. Cauthorn, of Richmond, Va., has written a paper in the *Monthly Stethsocope*, in which he calls attention to this plant as a useful remedy in intermittent fever. He has given it in six cases with success, and without its producing in any of them those distressing symptoms which often attend the administration of quinine. The bark of the root is the part used, and in the form of pills, preferably to that of tincture. Of the former, Dr. Cauthorn has given to the extent of from xviii grains to ℈i, and without producing either emesis or catharsis—results which he was told sometimes followed its use in domestic practice. Commonly, each pill contained two or three grains of the bark, which was sometimes combined with capsicum, sometimes given alone. A cure has followed the use of one dozen of the pills; two having been taken at intervals of every two or three hours.

Gentiana Quinqueflora? Indian Quinine—Ague Weed.—Dr. E. P. Wood, of Wisconsin, states that this plant is used to a very great extent in domestic practice, and that he has himself given it in quite a number of cases of intermittent fever with benefit.—*Trans. Illinois State Med. Soc.* for the year 1857.

Electro-Magnetism.—Dr. E. P. Christian, in a Report, already mentioned, and which we read in the pages of the *Peninsular Journ. of Medicine* for May, 1857, gives an encouraging view of the curative powers of electro-magnetic agency in periodical fever. He introduces cases of intermittent fever cured by it. His experience of its effects in diseases is summed up in the following series of propositions—1. No positive advantage could be discovered from the choice of one mode or direction for conveying the current over another. In the application intended to break up a paroxysm, one pole was usually placed against the epigastrium, the other being held in one hand; in dumb ague in the extremities, or neuralgic or rheumatic pains of these parts, the current was passed through them, along the course of the nerves. 2. Usually the force of the current, beginning with a weak one, was increased by degrees, as far as it could be tolerated without actual suffering, and continued, not arbitrarily, but until soreness was complained of from its use. 3. Local inflammation existing, there was invariably intolerance of the current, and acute phlogosis furnished a clear indication to abstain from its use. One case of bronchitis was invariably aggravated by this means; and in convalescence from pneumonia and in erysipelas there was absolute intolerance. 4. The benefit from electro-magnetism was the greater, the earlier the date at which it was resorted to after the attack; and the less was it to be relied on in cases in which there were extensive organic lesions. 5. The benefit derived from this agent was the most decided during the cold stage, on which occasion it almost uniformly checked the rigors, produced warmth and perspiration, relieved the pains in the loins and limbs, ameliorated the headache, and disposed the patient for a refreshing sleep. Sometimes the return of the fever was prevented altogether; at other times its duration was shortened, and it was made, also, lighter. The pulse was usually increased in fulness, as well as frequency, to the extent of from 8 to 12 beats. 6. The variations in this latter respect were greatest in those enfeebled by disease. 7. In two cases of chronic amenorrhœa, consequent upon ague, the menstrual discharge was brought on at the next regular period succeeding its use. 8. It displayed decided efficacy in resolving indolent tumors, enlarged glands, &c., besides reducing enlargements of the spleen. 9. Its too long or too frequent application caused not only soreness of the muscles but, also, a severe form of spinal irritation, requiring rest and counter-irritation for its relief.

The author very justly remarks, in conclusion, that electro-magnetism is a remedy of itself in a large number of cases, and an adjuvant in others; but that it is also powerful for evil as well as for good.

Indian Corn Meal.—Dr. D. B. Phillips, of the U. S. Navy, relates, in the *Am. Journ. of Med. Sciences*, Oct. 1857, his having given with success, in a case of intermittent fever, Indian meal, unsifted and uncooked, in the dose of a tablespoonful mixed in a glass of cold water, repeated every two hours. The first dose was taken in the last stage. Dr. Phillips gave his patient a dose of calomel the same night. On the following day, the use of the meal was resumed, with the effect of postponing the paroxysm, which was much milder, to a later hour. There was no return of the disease, although the meal was continued two days longer.

Some of our readers may ask,—Which was the curative agent in this case, the calomel or the Indian Meal?

Prepared Chalk and Vinegar.—With such a long list of cures, simple and complex, popular and professional, active and inert, it is wonderful that there should be found a single case of intermittent fever which is not immediately cured. Dr. Hodsden, of Sevier, Tenn., reports great success in the treatment of this disease with a mixture of prepared chalk and vinegar. It had cured, without a relapse, every case in which he had used it. He gave it in doses of a *tablespoonful* each (mixing them together and allowing the effervescence to cease) an hour before the time of the expected chill. The remedy operates as a cathartic, and excites the kidneys and other secreting organs. Dr. Hodsden received the knowledge of it from a friend in the West, who stated that he had seen hundreds cured by it.

It remains to be learned, whether a perfect acetate of lime will have the same effect as the imperfect one with a large excess of chalk, now recommended. Facts must always take precedence of theory; but, so far, general experience shows that all the remedies which have maintained their reputation for the cure of periodical fevers act on the nervous system; derangement of which is a fixed and predominent element in this class of diseases.

At the meeting of the East Tennessee Medical Society, in the transactions of which (*Nashville Journ. of Med. and Surg.*, June, 1857,) Dr. Hodsden's remarks are reported, Dr. Currey stated that he had used cider with satisfactory results in obstinate chills. Dr. Pride spoke of the good effects of sage tea in a case coming under his own observation.

Confection of Cinchona.—Dr. D. S. Gleninger, of Philadelphia, recommends highly, in the *Am. Journ. Med. Sciences*, Jan., 1858, this preparation (made of the calisaya bark) as one of our most efficient anti-periodics. "It sits well upon the stomach, does not produce the unpleasant cinchonism often complained of from sulph. quinia, etc., and comprises all the *powers* of the cinchona, gratefully disguised, and in such a concentrated form that the dose is *too small* even to be ungrateful to the most delicate stomach."

The formula furnished by F. L. John, pharmaceutist of this city, is the following: "*Confectio Cinchonæ*—℞. Cort. cinchon. calis. ʒj.; confect. sennæ, āā ℥i.; ammon. muriat. ʒss.; syrp. cort. aurant. ℥ij.—M. ft. confect. Dose, the size of a shellbark three times a day."

TONICS.

Quinine in Asthenic Pneumonia.—The quinine in this case was not employed as an antiperiodic, and, therefore, according to usage, and in reference to its other effects, we place it under the head of "Tonics." Our own opinion of the *modus operandi* of quinine was given some years ago, when we had occasion to discuss the question of its remedial virtues in congestive fever. We will not go over the subject again in this place, but would merely remark that quinine, taking into consideration both its therapeutical and toxical effects, bears a closer analogy to the narcotic-sedatives than to any other class of medicines, certainly more than to tonics, as they are commonly considered and described.

Dr. J. D. Boyd, of Abbeville, North Carolina, in a note written in January of the present year to the editor of the *Charleston Med. Journ. and Review*, and inserted in its March number, states the satisfactory result of the administration of quinine in a case of asthenic pneumonia of several days' standing, in which "the patient had been purged and blistered according to the most approved modes." The state of the patient being one of extreme danger, in which dissolution was threatened, Dr. Boyd "determined to try the effect of large doses of quinine. Accordingly, five-grain doses of quinine were administered every three hours, and in less than twenty-four hours a marked change for the better was evident. The same treatment was continued for three days, during which time a rapid improvement took place, and the patient was discharged on the fifth day from my first visit, being then able to sit up."

Iron in Erysipelas.—Dr. W. Parker, of Richmond, Va., adds his favorable testimony (*Virginia Med. Journ.*, Nov. 1857,) to that of so many others, to the remedial powers of muriated tincture of iron (*tinct. ferri. chloridi*) in erysipelas. Dr. Parker recommends this medicine only in two forms of the malady, viz., 1st, in simple erysipelas of the head and face, and 2d, in what is perhaps properly called vesicular erysipelas. The first case narrated by Dr. Parker was that of an old lady, seventy-one years of age, of a gross habit and large frame. To her, after a dose of salts, he gave twenty drops of the tincture every four hours, night and day. On the next day the dose was increased to thirty drops, and two days after this it was reduced to twenty drops. Patient convalescent on the fourth day after he first saw her, and on the fifth of her disease.

HÆMOSTATICS.

Chlorate of Potash.—Dr. Dupree, of South Carolina, informed his brother, Dr. Dupree, of Nashville, that he would find chlorate of potash, in doses of ten grains, three times a day, very useful in passive hemorrhage. He commends it especially in hæmoptysis. "At the time Dr. Dupree mentioned this to us, we had a case of troublesome menorrhagia of long standing, sent to us from an adjoining county, which resisted the usual remedies. The affection subsided under the chlorate, and the patient soon regained her usual health without any other remedy."—*Nashville Journ. of Med. and Surg.*, Aug., 1857.

Oil of Erigeron.—Dr. Currey, of Tennessee, reports, in the "Transactions of the East Tennessee Medical Society," (*Nashville Journ. Med. and Surg.*, June, 1857,) the employment of this oil in four cases of uterine hemorrhage; in three of which it had produced happy effects, and in one case of hæmoptysis. He administered the oil in the following state of combination:—℞. Ol. erigeron, gtt. xlviii.; Pulv. G. Arab. ʒij.; Sacch. alb., ʒij.; Water, ℥ij.—ɱ. Dose, a tablespoonful every one hour or two hours, according to circumstances. In the first case reported, viz., of hemorrhage in the tenth week of pregnancy, the discharge ceased entirely after four doses had been taken; and the patient went on to her full time without any untoward occurrence.

Ergot.—Dr. Affleck, at a meeting of the "Belmont Medical Society," (Ohio,) related a case of labor preceded by severe hemorrhage, in which ergot had a beneficial effect. Dr. Wierick thought it a good hæmostatic in hemorrhage following delivery.

Ice.—Dr. E. A. Hildreth, of Wheeling, Va., reports, in *Cincinnati Med. Obs.*, his success in checking a dangerous uterine hemorrhage by introducing ice into the cavity of the uterus. In the first case related, Dr. Hildreth, after other means, including cold affusion to the abdomen and ice on the hypogastrium and in the vagina, had been used in vain, introduced a lump of ice, as large as a lemon, into the uterus. "The effect was immediate and powerful, expelling a quantity of coagula, and contracting the uterus to its usual size and firmness; pulse 120, small and weak; complains of giddiness. M.M., perfect rest in horizontal posture; pulverized opium, grs. iii., immediately after rest; panada with brandy. Saw her four hours after; has slept some; no return of 'wasting;' feels comfortable; pulse 100; womb well contracted, no pain on pressure." The case progressed regularly to entire restoration of strength. In another case, the introduction of a piece of ice about the size of the index finger, arrested the hemorrhage, although the placenta did not come away for thirty hours afterwards.

Nitric Acid.—Dr. Noble, at a meeting of the "De Witt County Medical Society," stated, in a discussion on the treatment of typhoid fever, that he had saved the life of a patient, who previously had exhibited no alarming symptom, when sinking under passive hemorrhage of the bowels in this fever, by large doses of dilute nitric acid, and found in different cases of this passive intestinal hemorrhage the very best results follow the combination of *turpentine* with nitric acid. Dr. Edmiston united strychnia to the nitric acid in the following proportions:—Strychnia, gr. i.; Nitric acid, ʒi.; Tinct. opii., ʒij.; Aqua, ℥ij.—M. Dose not stated.

ANTHELMINTICS.

Starving out and Intoxicating a Tœnia—Other Remedies.—A writer, signing himself "L.," who, as he states, is a druggist, gives, in a letter to the editor of the *Am. Journ. of Pharmacy*, an account of the various remedies to which, in his own person, he had recourse for the expulsion of tænia. From his description, he would seem to have suffered at first from ascarides. He was made aware of his having tape-worm by the expulsion, aided by his own efforts at traction, of a portion of this parasite, measuring thirty-two feet in length. In the following year, 1855, he passed "between eighteen and twenty, five feet in length." This was on his return from California. In New Orleans he tried a number of remedies, including koussa, but without any relief. During this time he had a morbid desire for alcoholic liquors, of which he drank very largely. Afterwards, in New York, he substituted bitter tinctures. Finally, after some reflection on his case, he began the following treatment:—When he wanted stimulants, which seems to have been pretty often, he took ten or twelve drinks every day, each consisting of two to three ounces of a mixture of equal parts of the compound tincture of gentian and the tincture of colombo. He took, in addition, only a little soup. At the end of a week he found the worm was getting sick of its diet. It passed off quite freely. We give the rest of the narrative in the words of the writer. "Now, I took a sixteen-ounce syringe, filled it with warm milk and sugar, took the injection, retained it fully two hours; when it passed off, the worm started; I again received over fifteen feet, but before I could pull it all he had fastened. I could feel that it was in the lower intestines, so I did not break it, but held on. I poured out two ounces (fluid) spirits of turpentine, took it with an ounce of castor oil, sat down in a chair for over two hours, (still retaining the worm so as to prevent his going higher;) in a little over two hours the medicine operated, and my friend had got sick of turpentine, and he passed off with the greatest ease, in all a little less than eighteen feet. Fearing there might still be some remains of him, the next day I took one ounce of turpentine followed by oil. This was last April, and I have not felt the least symptoms of the worm since." The letter was written in October. "L." has but a moderate appetite for drink now; in fact, he feels "like a new man."

Some persons may question the safety and necessity of an individual running the risk of becoming an habitual drunkard, in fact of his being temporarily one, in his endeavors to intoxicate the tape-worm in his belly, and at the same time to starve it out. After all, we are inclined to believe that the large dose of turpentine would have been fully operative without the preliminary course.

At a meeting of the St. Louis Medical Society, reported in the *St. Louis Med. and Surg. Journ.*, July, 1857, Dr. Boisliniere presented a specimen of *tænia lata* or *bothriocephalus* variety, which had been expelled by a dose of koussa after other remedies had failed. Dr. Pollak had treated several patients for tape-worm. In one case the patient was suffering from bilious fever, and was treated with calomel, quinine, and turpentine,—the worm expelled in this case was twenty-nine feet long. In another case he gave turpentine with a drop of croton oil,—the worm expelled was also very long. Dr. McPheters treated with success a case of tape-worm by the administration of a strong infusion of pumpkin seeds: a pint was taken daily until the final expulsion of the tænia. Dr. Pollak suggested as, within his own experience, a preferable plan, to give the pumpkin seeds bruised.

ECBOLICS.

Ergot of Wheat.—Dr. McGugin (*Iowa Med. Journ.*, July and August, 1857) relates a case in which, after the expulsion of a fœtus of between three and four months, the placenta was retained, and the os uteri so tightly closed as to preclude resort to any mechanical means for its removal. Ergot of rye was given in drachm doses, but without effect. Dr. McGugin, in running his eye over a field of wheat, saw, on "a number of heads, several parasitic grains similar to, though less than ergot of rye." A large tablespoonful of this was gathered at the doctor's instance, and a decoction was made of it, "which, in less than half an hour after its exhibition, awakened the contractile power of the uterine fibre, and the placenta was thrown off in a decomposed state, after which the woman recovered rapidly." Dr. McGugin adds: the ergot of rye which was used in the first instance had been "pronounced to possess its usual ecbolic properties by others."

Tartrate of Antimony in Enema.—Dr. Wm. Read, of Boston, reports (*Boston Med. and Surg. Journ.*, Jan. 1857,) a case of labor of nearly thirty hours' duration, in which the pains were good, but accompanied with no expulsive power; the os uteri was slightly elevated; the membranes had been ruptured spontaneously an hour and a half after the labor had begun. Under these circumstances, about two grains of tartrate of antimony were dissolved in six ounces of luke-warm water, and administered as an enema. "The pains, in a few minutes, entirely changed, becoming exquisite and more frequent; the os dilated fully, a profuse secretion of mucus took place, and the child was born at thirty-five minutes past 1 A.M., with the greatest ease in the delivery."

Shall we compare the operation of the antimony in this case to that of venesection or of opium, by the use of either of which, but under different circumstances, ineffectual expulsive efforts are replaced by strong and effectual ones?

DERMATIATRICS.

Arsenic and Stillingia in Diseases of the Skin.—Dr. Wm. M. Cornell, of Boston, read a paper before the Suffolk District Medical Society, July 26th, 1857, which, under the above title, appears in the *Boston Med. and Surg. Journ.*, August, 1857. He speaks of the fluctuations in opinion and practice respecting the use of certain therapeutical agents, and he would lead us to infer that there is reason for a diminution of the favor with which arsenic is still regarded in diseases of the skin of the impetiginous class. He is too general, however, in saying that, "as to cutaneous diseases, arsenic has long been the general constitutional remedy." We would reply that the best dermatologists restrict its use to certain classes of cutaneous diseases, and rest their hopes of its remedial power chiefly in scaly affections, and a few of the more chronic pustular ones.

Dr. Cornell's chief aim, in his paper, is to direct attention to the alterative properties of the *Stillingia Sylvatica*, or Queen's Delight, in a large number of cutaneous and chronic diseases, in which he has given it with decided benefit. He quotes the twenty years' experience of Dr. Simons, and the corroborative testimony of Dr. Frost, both of them eminent practitioners of South Carolina. For a year or two past, he has "given the *stillingia*, prepared from its root as the quinine is from the Peruvian bark. This is given in alterative doses of from one to two or three grains, twice or thrice a day. This is the dose for adults, and proportionately smaller doses for children, according to the age." Dr. Cornell furnishes the following formula for an excellent diet drink.—℞. Stillingia, root recent, ℥iv.; Sarsaparilla, cut fine, lbi.; Spruce, shavings, lbiss.; Sassafrass root, ℥vi.; Water, one gallon. Boil in a close vessel a sufficient time to extract the virtues of the articles. Water may be added as it evaporates, and it may be finally reduced to two quarts. To this sugar or treacle is added, and the whole simmered to the consistence of syrup.

"The saturated tincture of the stillingia may be added to the decoction of other ingredients after boiling them, as its virtues consist very much of a volatile principle. The dose for an adult is half an ounce to an ounce."

The efficacy of the stillingia is best manifested in chronic inflammations and other chronic diseases, and more particularly in the tedious sequelæ of syphilis, and in the blood diseases.

Tannic Acid and Glycerine in Sore Nipples.—The editor of the *Boston Med. and Surg. Journ.*, October, 1857, is assured by a friend that equal parts, by weight, of glycerine and tannin, is the best application for sore nipples which he has used. It is also an excellent remedy for chaps and excoriations of other parts. The tannin is readily dissolved in the glycerine.

By others a smaller proportion of tannin is introduced into the combination of the two substances.

Ioduretted Glycerine.—Dr. Gage, of New Hampshire, as is stated in the *American Druggist's Circular*, recommends this preparation, which has the advantage over both alcoholic and aqueous solutions of not drying. It is made by dissolving one part of iodide of potassium in two parts of glycerine, and with this liquid combining one part of iodine, which becomes completely dissolved. After applying it, the diseased parts thus coated are covered by paper of gutta percha, to prevent evaporation of the iodine.

Topical Stimulants and Escharotics.

Iodine in Neuralgia.—Dr. W. G. Thornton relates (*New Orleans Med. News, &c.*, July, 1857) his success in promptly and effectually relieving neuralgia of the left side of the head, by the application of tincture of iodine to the affected part. The effect, says Dr. T., "was almost immediate. I had not finished its application before the pain began to diminish, and soon ceased entirely, and it has not returned since." It may be proper, however, to state that I prescribed immediately—℞. Syrup sarsap. comp., ℥viii.; Potass. iodid., ʒi.—♏. Half an ounce to be given three times a day, and the tincture to be applied next morning in anticipation of an attack.

Topical Use of Nitrate of Silver for Obstinate Vomiting in Pregnancy.—Dr. Henry F. Campbell, one of the editors of the *Southern Med. and Surg. Journ.*, in a note prefixed to an article on this disorder, mentions the treatment adopted for its relief, by the now Rev. Dr. C. T. Quintard, formerly Professor of Physiology and Pathology in Memphis Medical College. It consists in cauterizing the fauces freely with a solution of nitrate of silver, consisting of about fifteen grains to the ounce of water. "The experiment was entirely successful." Dr. Campbell asks whether similar means might not act as efficiently in relieving vomiting when it occurs under other circumstances?

A German physician, Dr. Eulenberg, of Coblentz, recommends in strong terms, on account of its efficacy, a very delicate tincture of iodine. He directs ℈i. of the tincture, to ʒiij. of rectified alcohol, of which three drops, in water, are to be taken several times a day. Dr. E. says that other sympathetic irritations and neuroses of the stomach are alleviated by similar treatment.

Iodide of Zinc in Conjunctivitis.—A writer in the *Peninsular Journ. of Med.*, March, 1857, calls attention to the use of iodide of zinc as a topical remedy in opacity, resulting from protracted inflammation of the eye. Dr. Pilcher, in his attendance in St. Mary's Hospital, Detroit, "has derived very considerable benefit" from this remedy. "He applies it several times a day in solution, the strength of which is varied according to the sensation produced by it. Ordinarily it is made by dissolving ℈ss. of the iodide in ℥i. of water. Some cases will tolerate a solution twice the strength of this."

ANTIDOTES.

In the uncertainty as to when a report on *Medical Jurisprudence*, including *Toxicology*, will be made, we give place, at the present time, to a notice of a few alleged antidotes. We say alleged, for it happens, too often, that the first observations, and even experiments, going to show that a particular substance is a certain antidote, are not borne out by succeeding observations and experiments, and hence a justification for extreme skepticism to first announcements of this kind.

Camphor as an Antidote to Strychnia.—Dr. Claiborne, of Petersburg, Va., relates the case of a young man about 30 years of age, who took a portion—it is not known how much—of five grains of strychnia, which he had purchased of an apothecary. About forty minutes afterwards, Dr. C. found this person in a state of violent tetanic spasm—touching the bed only with his head and his heels. The convulsions, as they came on, were always tetanic in their form, but often ended epileptic: they were scarcely absent, however, in one or the other form, two minutes consecutively for the first two hours immediately subsequent to Dr. C.'s seeing him, so that the patient was often unable to utter a word for fifteen or twenty minutes at a time. Once or twice, respiration was suspended for so long a time, that Dr. C. feared he had ceased to breathe forever. At these times, a douche of cold water on the face and throat contributed greatly to bring about a successful effort at inspiration. He swallowed with difficulty, even in the intervals of the most complete remission.

The treatment pursued by Dr. Claiborne consisted in the administration of large doses of camphor. He writes: "I gave him, for the first dose, twelve grains of the powdered gum, suspended in a little syrup. In half an hour I repeated the drug, giving him only six grains; and this dose I continued to exhibit every twenty or thirty minutes, taking advantage of the most favorable period of remission, until fifty or sixty grains had been taken. The patient then becoming better, no more was given. No other medicine at all was used during the paroxysm. The day after his attack, I gave him an ounce of the cold-pressed ricini, rubbed up with a little rhubarb, potass., and a few drops of the liq. morph. acetat., and ordered a few dozen leeches to the epigastrium."

Blood in small quantity accompanied the discharge from the bowels for several days, but this did not seem to call for treatment.

Dr. Claiborne thinks it probable that the subject of the above case took between one and two grains of the strychnia.

Strychnia Poisoning Arrested by Sulphate of Morphia.—Dr. H. L. Phillips, of Bradysville, Ohio, tells (*Western Lancet*) of his combating with success the poisonous operation of strychnia by sulphate of morphia. A lady, who had been accustomed to use morphia to the amount of two grains at a dose, for a paroxysm of asthma, took, by mistake, in its stead, three grains of strychnia in three doses. Dr. Phillips, on being summoned, lost no time in placing his patient in a warm bath, and in giving her freely the sulphate of morphia. She took of this salt, *five grains* in a period of ten hours. The recovery of the patient was complete.

Chloroform in Strychnia Poisoning.—Dr. H. O. Jewett communicates, in the *Boston Med. and Surg. Journ.*, an account of a case of poisoning by strychnia, for which inhalation of chloroform was practised with entire success. The patient, a boy 15 years old, took, by mistake for morphia, a quantity of strychnia, supposed to be about two grains. Thirty or forty minutes passed before aid could be procured. Violent tetanic spasms occurred in quick succession; deglutition was impossible. After the first inhalation of the chloroform, relief was obtained in ten minutes. Partial anæthesia was kept up for about four hours and a half, when it was discontinued. There was no return of the symptoms.

Ether against Chloroform.—The asserted antidotal operation of ether against the toxical effects of chloroform, have not been sustained by carefully made experiments on the subject. So far from any beneficially modifying influence being exerted by the ether, it would seem, on the contrary, to have produced a complication more dangerous than the original poisoning.

Coffee an Antidote to many Poisons.—Dr. Max. Langenschwarz, in the *Am. Med. Gaz.*, May, 1857, announces, as a fact known to "a very few persons," and, as he believes, "to but a small number of medical men," that "coffee is one of the most important antidotes to many deadly poisons, and to a great many ordinary drugs." Dr. L. directs, for this purpose, "a tincture of raw coffee" prepared as follows:—"Take a quarter of a pound of green coffee (common Domingo the best) and boil it with one quart of water till it is reduced to one pint; then put the whole (berries and liquid) in a quart bottle, add one pint of strong alcohol, and shake it from time to time a little. This tincture gets stronger from day to day, and will, if the bottle is well corked, keep for many years without changing. If to the pint of alcohol (about ten minutes before uniting it with the coffee decoction) you add a little spirits of camphor, say two tablespoonfuls, you will not only triple and double the anti-poisonous quality of the tincture, but this preparation will be an invaluable and certain antidote also to the following poisons:—Garden hemlock, [or dog's] or fool's parsley, (Æthusa cynapium,) particularly deadly to full-blooded persons, and producing (by confounding it with common parsley) almost every year fatal poisonings in all countries; chalk; barytes; poisonous lettuce, (Lactuea virosa;) capsicum, or Spanish pepper; animal coal; cocculus, (Menispermum cocculus;) drosera rotundifolia, or sun dew; euphorbium, spurge, or the so-called wolf's milk; black hellebore; henbane, (Hyoscyamus niger;) hell fig, (Jatropha curcas,) called also the black vomit-nut, one of the most terrible poisons; wild rosemary, (Ledum palustre;) (Moschus,) musk; nitric acid; muriatic acid; phosphoric acid; crows-foot (Ranunculus) of every kind; poisonous snowrose, (Rhododendron chrysanthum;) garden rue, (Ruta graveolens;) savin, (Sabina,) called also mother tea; ergot, (Secale cornutum;) silica; bittersweet, (Dulcamara;) common sponge, (only the burnt one is employed as a remedy, but I saw very grave accidents to children, having taken pieces of the raw sponge into their mouths;) stavesacre or mice-pepper, (Staphysagria;) tobacco and the horrible nicotine, (the patient can only be saved by our composed antidote of raw coffee, tincture and camphor;) zinc preparations of every kind."

The poisons to which the simple tincture of coffee, prepared as above, is an antidote, as we are assured by Dr. Langenschwarz, are: "laudanum or opium; atropine and belladonna; aconitine and aconite; strychnine and vomit-nut, (*nux vomica;*) chelidonine, and the herb chelidonium majus; caustic lime, potash, and all caustics in general; phosphorus, and all phosphoric preparations; solanine, (principal basis contained in the germs and first shoots of potatoes, and very often self-developed, if potatoes remain moistening in humid cellars;) arum, (Caladium, or Arum seguinum;) brownstone, (Manganum;) veratrin and the white hellebore, (Veratrum album; tansy oil, (or the infusion or tincture of tanacetum vulgare.) The tansy oil has been, and is still recommended by criminal persons, for the purpose of abortion, although it never produced abortion, but frequently kills mother and child together; borax; coloquints; poisoning and suffocation by charcoal vapor, and therefore, of course, also pyrocarbon, (the artificial or chemical development of the same poison; the spotted hemlock, (Conium maculatum.) The concin contained in the seed is one of the most horrible poisons I am acquainted with; iodine; lycopodium; cherry-laurel, (Laurocerasus;) poisonous sumac, (Rhus toxicodendron; valeriana; St. Ignatius's beans; fly mushroom, (Agaricus muscarius;) and all kinds of poisonous mushrooms."

Dr. L. does not favor us with a single experiment in confirmation of his positive assurances of the antidotal power of his tincture of coffee. He proclaims this article itself to be a poison. "If we take a large quantity of boiled coffee without suffering, it is only the habit of taking it from childhood which saves us. People in Turkey take, without danger, quantities of opium sufficient to kill a dozen of us, because they are in the habit of using it from childhood. In Tyrol, the general habit of hunters is, to take a good piece of pure white arsenic upon their tongue, to protect them (so they say) from getting thirsty." Dr. L. does not believe in the identity of cafein and thein, as proclaimed by Liebig; and in this skepticism we join him, on the strength of the marked difference in the effects of tea and coffee on the organism; the former being so grateful to the thirsty and the feverish individual, the latter, on the contrary, as heating and exciting, is regarded with aversion in these conditions of the system. In view of the reactive operations of coffee on certain poisons, which, in proper doses, are given medicinally, this article ought, Dr. L. tells us, to be withheld when we desire to place the patient under the influence of the latter substances. "If, for example, a patient swallows, at seven o'clock, a spoonful of iodine preparation, and then takes, ten minutes after, only one spoonful of good coffee, he will at half-past seven have no more iodine in force in his system than he has whalebone force in his hairs. But," adds the author, in a fling at dishonest grocers, "certainly the matter I speak of must be coffee, and not that innocent and precious genuine coffee article of certain New York merchants, consisting one-half in roasted carrots, another half in succory, and (excuse that new arithmetic) a third half in 'smart merchants' tricks.'"

As relates to dose and mode of administration, Dr. Langenschwarz gives the following directions:—"The compound saving-tincture (of green coffee and camphor) is, in the respective cases of poisoning, to be administered naturally and by clyster; the internal dose, about ten to twelve drops in a teaspoonful of water every five minutes, and every fifteen minutes when the patient begins to recover. Larger, and even very large doses may be given if the danger of life is imminent."

Bibron's Antidote to the Poison of the Rattlesnake.—Dr. Hammond, United States Army, relates (*Am. Journ. Med. Sci.*, Jan. 1858,) the results of his observations and experiments on July 1, 1857, to show the value of this antidote. The first case was that of a hospital steward, bitten by a rattlesnake on the inner finger of the right hand. About four minutes after the bite, Dr. H. administered Bibron's antidote, after which the symptoms almost immediately disappeared. The pain and swelling, with throbbing, of the part, having returned after a period of forty minutes, the doctor repeated the medicine, and in less than five minutes the finger had regained its natural appearance, and all pain and pulsation had vanished. Two experiments on animals, the one on a wolf, the other on a dog, both of them bitten by a rattlesnake, showed the great activity of the antidote in arresting, at once, the alarming symptoms and restoring the animal to health.

Professor Bibron's antidote is, according to Prince Paul of Wurtemberg, who took a lively interest in the matter, prepared as follows:—Potassii. iodidi, grs. iv.; hydrargy. chlorid. corros, grs. ii.; bromini, ʒv.—♏. Ten drops* of this mixture, diluted, with a tablespoonful of wine or brandy, constitute a dose, to be repeated if necessary. It must be kept in a glass-stoppered vial, well secured.

Dr. Coolidge, United States Army, communicates to Dr. Hammond an account of the case of a girl, aged 15 years, who was bitten in July, 1857, at Fort Riley, by a rattlesnake, on the dorsal aspect of the first phalanx of the ring finger of the right hand. In a few minutes the finger became swollen and blueish, and in about ten minutes after receiving the wound, when Dr. Coolidge first saw her, the forearm had begun to swell, and pain extended to the elbow. The patient was depressed and somewhat nauseated. An older sister had sucked the wound at the very first instant of its infliction. Dr. C. made a free incision down to the bone, and as soon as the articles could be prepared, he gave ten drops of the bromine mixture, diluted, and injected into the wound an iodu-

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[*] As no solvent is mentioned in this formula, we are unable to attach any meaning to the dose of ten drops, or to tell its strength.

retted solution, recommended by Dr. David Brainard, consisting of iodine, ten grains; iodide of potassium, thirty grains; and distilled water, one ounce. This caused severe smarting pain. The patient expressed herself relieved after the first dose of the bromine; a second one was given in twenty minutes; nothing more was done; the girl recovered,

Lard an alleged Antidote to Strychnia.—As a practical commentary on our introductory remarks on antidotes, we may repeat here the results of Dr. Hammond's experiments on animals, with a view of testing the antidotal virtues of lard, as set forth by Dr. Pindels. Dr. H.'s conclusion is, that if it have any effect, it is to give increased activity to the toxical operation of strychnia. He gave to two dogs each two grains of strychnia, and to one of them, in addition, a pint and a half of lard. The dog which took the lard died; the other, a miserable cur, escaped unharmed.

Shall we introduce, under the head of Antidotes, Vaccine Matter against Smallpox—not as a preventive, but, pending this latter disease in its declared state, as a cure? The fact, if fact it be, is announced in the *Am. Journ. of Med. Sci.*, Oct. 1857, in the following terms:—

"*Vaccine given Inwardly for the Cure of Smallpox.*—By R. Landell, M.D." This gentleman first tried this new treatment in epidemic smallpox in 1842, and between this date and 1854 he has had every reason to be satisfied with its success. His directions are, to "dissolve the vaccine that is contained on a pair of plates in a capillary tube, which is about four or six drops of vaccine lymph, in four or six ounces of cold water, and give to the patient a tablespoonful every two or three hours."

"The favorable result of this exhibition is, that it mitigates the symptoms, modifies the species, and cures the smallpox." More than this no reasonable man can expect. Dr. L. tells us, in addition, that, by this treatment, he has "seen disappear the fever, delirium, hoarseness, diarrhœa, pneumonia, cerebral congestion, and the secondary fever."

The cure is not, however, left entirely to the vaccine matter, as we learn from the following:—"It may be mentioned here that the use of emollient clysters or castor oil internally, to keep the bowels loose, and in children, calomel, is very necessary; as also gargles of nitrate of silver and chloruret of lime. And, after the fifth day, give baths of warm water, with a little chloruret of lime, or chloruret of soda, or sponge the body."

Dr. L. has, also, "given vaccine inwardly as a therapeutic remedy in hooping-cough."

Hitherto, we have been taught to believe in the general innocuousness of animal poisons, when introduced into the stomach. If Dr. Landell's treatment be confirmed by the experience of others, we must, for the future, abandon this creed as untenable. The gentleman writes from *Porte Alegre*, Brazil.

There are yet other papers, on subjects some of them actually belonging, others germain to our branch, but we can only barely allude to them now, as we have already far exceeded the limits originally assigned to us. Among the therapeutical articles we may mention *Medical Inhalation*, some useful observations on which are made in the *Bost. Med. and Surg. Journ.*, Oct. 1857, by Dr. E. J. Coxe, Visiting Physician of the Charity Hospital, New Orleans. He had discussed the subject, in greater detail, in a former number of the *Boston Journal.* Attention may also be directed to an ingenious essay on the "*Use of Water in the Treatment of Fever*," by Dr. Isaac Casselberry, of Indiana, in the *Am. Journ. of Med. Sci.*, July, 1857. Of a similar tenor, but deficient also in clinical application, is "*An Inaugural Dissertation on Cold Water as an Auxiliary in the Treatment of Disease*," submitted for the degree of Doctor of Medicine in the University of Nashville, and published in the *Nash. Journ. of Med. and Surg.*, March, 1857. An instructive article, illustrated by numerous wood-cuts, "*On the Localization of Baths, and on the Application of Cold and Heat on the Different Parts of the Body*," by Charles Mayor, M.D., will be found in the March number of the *N. Y. Journ. of Med.*, 1857.

It is lamentable to think of the neglect, by the great body of the profession, of the curative powers of water, externally applied, in a long list of diseases, including more particularly those of the febrile class. As an agent of hygiene, it is, when not neglected, too often misapplied by the people at large; nor are they much benefited by the crude advice, growing out of ignorance of the subject, by so many of their medical advisers.

Remarks to the same purport might be made in reference to the waters of Mineral Springs, the use of which, in a great majority of cases, is purely empirical.

Dr. Wright, Professor of Chemistry in the Kentucky School of Medicine, has a paper in the *Western Lancet*, May, 1857, "*On the Chemical Composition and Medical Properties of the Waters of Grayson Springs, Ky.*" In 10,000 parts, by weight of the water, he found, on an average, 1270 of different saline substances.

We meet with some papers in the Journals through which we have looked, on the *Materia Alimentaria;* such, for example, as the "Report on *Condensed Milk*, by the Section on Materia Medica and Botany" of the N. York Academy of Medicine, published in the *Am. Med. Gaz.*, Dec. 1857, a synopsis of which appears in the *N. Y. Journ. of Med.*, Jan. 1858. We indulge the hope that, on a future occasion, a reasonable space will be given to a consideration of the whole subject of Materia Alimentaria.

Dr. Huff, of Lexington, Ky., has a short and instructive paper "*On the Use and Abuse of Chemical Baths*," which appears in the *N. Y. Medical Times.* Dr. H. explains the marvellous accounts of mercury being eliminated by galvanic process from the bodies of those who had previously taken this metal to any extent. He shows, that what has been mistaken for mercury is tin eliminated from the metallic bath-tub, and deposited on a plate of copper within the said tub.

We notice with pleasure an article, which is a continuation of a preceding one, "*On Hygiene*," by A. B. T., in the *Medical Independent*, for April, 1857.

As coming within the scope of our present theme, mention may also be made of the labors of Dr. J. P. Batchelder, of the City of New York, on enlisting gymnastics for the cure of paralytics, of which notice is taken in the *Medical and Surgical Reporter*, (1857.)

Foreign Abstracts,

CHIEFLY FRENCH, GERMAN, AND ITALIAN; OR, BI-MONTHLY NOVELTIES IN MEDICAL, SURGICAL, OBSTETRICAL, AND CHEMICAL SCIENCE. BY EMIL FISCHER, M.D.

CHEMISTRY AND PHYSIOLOGY.

I.—*Researches on the Chemical Composition of the Brain.* By M. MÜLLER.

IN his first memoir on the composition of the brain M. Müller states—1. That the human brain contains a small quantity of creatin; 2. That the creatin does not exist in the brain of the ox, where it is substituted by leucin, or a substance homologous to it; 3. That in the human brain, and in that of the ox, much lactic acid, and a small quantity of volatile fatty acids, $C^n H^n O^4$, is found; 4. Finally, that the brain of the ox contains a small quantity of uric acid, and a notable quantity of inosit, $C^{12} H^{12} O^{12}$.—(*Annales de Chemie et Physique;* and *Journ. de Pharm. et Chem.*, July, 1858.)

II.—*On a New Basic Substance Extracted from Muscles.* By A. STRECKER.

In the syrupy liquor of the extract of muscular tissue the author has found a new substance, feebly basic, which he calls *sarkin*. He extracted it in the form of a white crystalline powder, which resists a heat of 150° R., and is decomposed without melting at a higher temperature. It is soluble in 300 parts of cold water, and in 900 parts of alcohol when heated. Its formula is C^{10}, H^4, Az^4, O^2. In the flesh of the ox it is contained in the proportion of at least 0·22 to 1000. It has been found in the flesh of the ox and horse. In several particulars it resembles hypoxanthin, guanin, and xanthin.—(*Schmidt's Jahrbücher*, 1858, No. 1, p. 15; and *Journ. de Physiol.*, April, 1858.)

III.—*Influence of the Spinal Marrow on the Brain.* By DR. BROWN-SÉQUARD.

Dr. Brown-Séquard found that on section of one-half of the spinal marrow in the lumbar region, the skin of the face acquired, on the side on which the operation was performed, the power of causing epileptiform convulsions when irritated; this cutaneous zone seems to have undergone a great modification, which is attested by the great number of lice which prefer to meet on this spot. Sometimes the cornea ulcerates or becomes opaque; at other times, and always on the side of the section, convulsions supervene in the muscles of the face; they are of short duration, and are followed by an equally transitory augmentation of the secretion of nasal mucus. As all these disturbances show themselves on the same side with the section of the spinal marrow, a transmission through the sensitive nerves is out of question, for they cross each other in this structure; the modifying action passes through the brain to certain nerves of the face of the same side, following, probably, conducting elements which do not cross.—(*Journ. de Physiologie*, April, 1858; and *Archives Générales*, July, 1858.)

IV.—*Measurement of the Sensibility in the Morbid State.* By DR. BROWN-SÉQUARD.

The process employed by Dr. Brown-Séquard is the same used by M. Weber for the measurement of the normal sensibility. It is known that M. Weber has determined for different regions of the body, the distance beyond which two points of the compass applied on the skin produce a double impression. Dr. Brown-Séquard uses a graduated compass with pointed branches, an imitation of the æsthesiometer of Dr. Sieveking. He thinks that by this means we may be enabled—1. To recognize the existence of a diminution or augmentation of tactile sensibility in cases where it would be impossible to ascertain it by other means; 2. To find out exactly the degree; 3. To follow in a precise manner the increasing or decreasing course, and to judge of the action of medicines. In a case of hyperæsthesia of the foot, the patient, who suffered from paraplegia, was found to perceive the sensation of two points at a distance of only five millimetres in the dorsal region of the foot, while in the normal state the sensation of two points is only perceived when they are at least twenty-four to twenty-eight millimetres distant from each other.—(*Journal de Physiologie*, April, 1858; *Archives Générales*, August, 1858.)

PATHOLOGY AND THERAPEUTICS.

V.—*Serous Sac of the Middle Ventricle of the Brain.* By PROF. FÖRSTER.

Prof. Förster reports the following very remarkable case: A chronic collection of serum in the ventricles had, by a peculiar distribution of pressure, distended the floor of the middle ventricle, and had pressed it outward, so as to form a pretty large sac of serum between the brain and its basis, which necessarily exerted considerable pressure upon the neighboring parts, particularly, however, upon the optic tracts and their chiasms. The patient, a man forty-four years old, of intemperate habits, complained first of a gradual decrease of his power of vision; at the same time headache set in, which was occasionally very violent, but afterwards abated. To these symptoms were added attacks of giddiness, and from time to time convulsions and vomiting. The pupil was dilated and rigid; the gait unsteady, with a prevalent debility of the right side of the body. From a seton applied to the neck, erysipelas was developed, which spread gradually over the head, chest, and left arm, and was accompanied by violent fever and delirium; after repeated convulsions and violent dyspnœa, death ensued. The sac mentioned above, bulged out between the two crura of the chiasms; was ten lines long, and eight lines in height and width; its wall was continuous at the base with the floor of the third ventricle. The microscopic investigation of the optic nerve revealed decrease of the nerve-fibres, and increase of the interstitial areolar tissue. The left half of the cerebellum was somewhat enlarged, and the medulla oblongata pushed thereby somewhat to the right side. In cutting through the midst of the lower part of the left small hemisphere, a circumscribed, but not encysted tumor, of the size of a walnut, was discovered near the periphery; it was found to be a tetangiectasis, consisting of an interlacement of prodigiously enlarged sinuate capillaries; by the confluence of such sinuses a body of the size of a pea, resembling a cyst, and containing fluid blood, was formed in the middle of the tumor. The vessels of the tumor continued at the periphery into the vessels of the cerebral substance. The cerebral tissue around it was softened.—(*Virchow's Archiv. für pathol. Anatomie und Physiologie*, 1858, xiii. 1.)

VI.—*Anæsthesia Universalis Peripherica.* By DR. BINZ.

A servant girl, nineteen years of age, of good constitution, took cold, and was found by Dr. Binz in the following condition: Moderate fever, and the usual subjective symptoms; the whole skin quite insensible to pricks with a needle, with the exception of a few places in the region of the trigeminus, where some sensibility existed; this anæsthesia was most decided at the extremities; also the apertures of the mucous membranes were insensible; deep pressure upon the muscles was, however, felt; sense of hearing and sight in normal condition; taste and smell abolished; power of motion retained in every part of the body. Patient took magnes. sulphas. and tea of flor. sambuci. The anæsthesia remained the same for four days; after that it gradually disappeared in indefinite succession under aid of energetic friction, so that the extremities regained their sensibility last. In eight days the patient was cured.

Dr. Binz considers this anæsthesia of rheumatic origin, as neither hysteria nor deception could be assumed. A similar case was reported in the *India Journal*, January, 1836, where one-half of the body of the patient became also completely insensible in consequence of exposure to the moist and cold night air.—(*Deutsche Klinik*, 1858, xii., and *Schmidt's Jahrbücher*, 1858, 6.)

VII.—*Pericarditis, with Acute Fatty Degeneration of the Heart.* By PROF. VIRCHOW.

A young man, twenty years of age, was attacked with pericarditis, in consequence of acute articular rheumatism, and died ten days after the attack. Prof. Virchow found the muscular structure of the heart degenerated in a manner never described before. The pericardium contained sixteen ccm. of a thin, blood-red liquid, in which, however, on microscopic examination, no blood-corpuscles could be detected, while the commencement of cadaverous changes was indicated by the presence of long vibriones, by the influence of ammonia, and perhaps by leucin being present only in small quantity. The surface of the pericardium was much roughened by thick layers of fibrin, which could be separated from the wall only by force. The muscular structure of the heart appeared pale, flaccid, and somewhat spotted, but on closer inspection it was found that the external layer of muscles underneath the whole extent of the pericardium had assumed a pale-yellow, muddy appearance. Microscopic examination showed that here all the primitive fasciculi had undergone so complete a fatty metamorphosis, that their inner structure was not any more perceptible. On penetrating to the deeper layers this metamorphosis gradually decreased; there was, however, no part of the muscular structure of the heart that had been quite free from fat-granules in the interior of the primitive fasciculi.

In the second case Prof. Virchow found, on autopsy, an unsuspected purulent pericarditis, in which the exterior stratum of muscles revealed the same change. In several other cases, on the contrary, partly of a less severe character, partly such in which the pericarditis was merely a complication of some other serious disease, this change was either quite absent or only little developed. The author is therefore of the opinion that this peculiar fatty degeneration, which penetrates from the periphery to the interior, is conditioned directly by the pericarditis, and that to it in particular the debility and paralysis of the muscles of the heart are to be attributed, which so much endanger the patient's life. It is, according to its seat, the opposite of the chronic fatty degeneration which accompanies the dilatation of the ventricles, and which is likewise attended by debility; the latter commences at the endocardium, usually in separate spots, a circumstance by which it is distinguished from the more uniform fatty degeneration of the inner muscular layers as observed in old people. The pericarditis is generally complicated with the disease of the inner structure of the heart, in those cases in which the action of that organ is subjected very early to an unusual acceleration. Just those cases of acute articular rheumatism offer the greatest danger in which the fever is very violent from the beginning. According to experience, that treatment has the best prospect of success which decreases the violence of the heart's action the quickest, and restores rest to the muscles most completely. Thus all the circumstances under consideration point out that the mechanical feature of the disease plays the principal part in regard to its etiology and prognosis; a quick and decided treatment is therefore of the greatest importance.—(*Virchow's Archiv. für pathologische Anatomie und Physiologie,* 1858, xiii. 2 and 3.)

VIII.—*Observations on Pulmonary Tuberculosis.* By PROF. LEBERT.

Prof. Lebert observed in his clinic, during the years 1855 and 1856, not less than thirteen cases of acute tuberculosis of the lungs, of which three occurred in male, and ten in female patients. He found, on experience, that the disease was capable of a cure. In persons who had died of other diseases he frequently met, on autopsy, with numerous miliary tubercles, which were shriveled and imbedded in pigmentary matter, without symptoms of tuberculosis having been manifest during the latter part of their lives. A women, thirty-six years of age, who had all the symptoms of acute pulmonary tuberculosis of typhoid character, began to recover after four weeks, and was dismissed cured after two months. In a case which terminated under typhoid symptoms, granulations were disseminated through the liver, spleen, and kidneys; tubercles were found on the great curvature of the stomach near the pyloric region, and granulations existed on the mucous membrane of the intestines. In chronic tuberculosis the author did not obtain the favorable results from the use of cod-liver oil which English physicians boast of; he recommends, however, its use as nutriment, in combination with bitters, tonics, ferruginous preparations, and, as a palliative, opium.—(*Virchow's Archiv.,* 1858, xiii. 2 and 3.)

IX.—1. *Acute Yellow Atrophy of the Liver with Icterus.* By DR. MUHLIG, of Constantinople.

2. *Similar Case.* By PROF. BAMBERGER, of Würzburg; *with an Analysis of the Blood, etc.* By PROF. SCHERER.

CASE I.—An English woman, twenty-one years of age, had suffered much of late from misery and grief. She had arrived at the last month of her first pregnancy, when her conjunctiva became icteric and her temper more irritable than usual. She was delivered without accident, and had no bad symptoms for three days; but in the night of the fourth she was seized with violent agitation and delirium. A physician was called in, and prescribed an emetic; afterwards the patient was put under mesmeric influence. Dr. Mühlig saw her on the fourth day. He found her lying on her back, the eyelids closed, the pupil dilated and immovable; the skin and conjunctiva colored light-yellow; expression and physiognomy apathetic; persistent trismus; from time to time hiccoughs, and slight flexing movements of the forearm. The patient was in profound coma; no sensibility betrayed on pressure in the hypochondriac regions. Involuntary evacuations; retention of urine; temperature of skin not sensibly augmented. Percussion gave a tympanitic sound in the epigastric, and an obtuse tympanitic in the hepatic region, over the inferior ribs, to an extent of about two fingers square; higher up dullness to the extent of about four centimetres. Purgative injections and sinapisms. Died the following night.

Autopsy.—Absence of cadaveric rigidity. Heart normal, containing some liquid blood and very friable clots. The liver was reduced to nearly two-thirds of its normal volume, and was concealed in the depth of the right hypochondrium; its peritoneal coat was wrinkled; its left lobe represented merely a small appendix to the right lobe. The diminution of volume was remarkable, particularly in the thickness of the organ, which seemed flattened, with the borders flabby and hanging down. Its tissue was flaccid and without resistance, and presented a uniform light-yellow color, except in some points where it was purplish-red, and gave out neither blood nor bile. Gall-bladder distended by a grayish, flaky liquid; biliary ducts contracted but permeable; spleen enlarged and softened; stomach and large intestines contained grayish mucus, mixed with a blackish liquid resembling coffee-grounds, but there were no hemorrhagic erosions present. On microscopic examination the hepatic cells were found completely destroyed; only a molecular, yellowish, uniform detritus, and some oil-globules were visible.—(*Gazette Médicale d'Orient*, March, 1858.)

CASE II.—M. T., twenty-eight years old, had recovered some weeks ago from a pelvic abscess which had discharged through the vagina. She lived in trouble, and seemed to have been subjected to strong emotions in the first days of her new malady. On the 3d of October, 1856, she became icteric; she complained of cephalalgia, tinnitus aurium, prostration, and pain in the extremities. On the 6th the liver extended beyond the ribs, and its border could be easily felt on palpation. On the 9th it could not be reached except by thrusting the fingers deeply into the hypochondrium; also percussion proved a diminution of the volume of the liver. On the 15th evening delirium set in, then agitation, and on the 16th, the day on which the patient entered the hospital, she was in a comatose state. Lying on her back, she seemed to be unconscious of what was passing around her, and only answered in monosyllables, if questioned; sensibility was, however, retained; convulsive attacks from time to time; intense icterus of the skin; pulse sixty-eight, very small; temperature in the axilla, 35·5° R. Right hypochondrium not painful on pressure; percussion dull only on the external side of the hepatic region to the extent of seven centim., more internally somewhat tympanitic; to the left of the median line all dullness disappeared; the stools only little colored; urine voided involuntarily, and of icteric tint. (Ether; wine; injections of vinegar; sinapisms; cold affusions.) A little improved on the 17th. On the 18th icterus more intense; depression more profound; pulse seventy; temperature 36·2°. (Calomel; affusions.) Much agitation during the night. On the 19th grayish, involuntary stools; nearly absolute coma; hepatic dullness less extended than previously; pulse eighty-four; temperature 36°; hands cold, cyanotic; the patient has, nevertheless, some appetite. On the 20th the stools were quite colorless; agitation alternated with prostration. On the 21st nothing could awake the patient; the skin, if raised into a fold, would resume its place only slowly; a diphtheritic ulcer had formed on the interior side of the lower lip; sanguinolent sputa; pulse 120. Died the same evening.

Autopsy.—Icteric coloration of all the organs, with exception of the brain, which contained only little blood, but presented no other anomaly. The left heart and the vena cava contained liquid blood mixed with some soft clots. Underneath the endocardium of the left ventricle a great number of ecchymoses were observed; the spleen was voluminous; liver atrophied; the diminution of volume affected particularly its left lobe, and the thickness of the organ, which, at a point of the right lobe, did not exceed eight centimetres. Its tissue was remarkably flaccid and friable; its color orange-yellow, mixed with red in the left lobe. The lobules were nearly effaced, except toward the posterior border of the right lobe, which contained also more blood than the rest of the organ. The branches of the portal vein were empty, otherwise healthy; the hepatic ducts collapsed, and for the most part empty. The gall-bladder contained only half a teaspoonful of thick bile of greenish-gray color; hepatic artery permeable. The microscopic examination showed that the lobules of the liver were preserved nearly everywhere. The cells, which occupied their centre, were much colored by bile, while those at the periphery were, for the greater part, destroyed, and replaced by fatty and pigmentary granules. The contents of the large intestines were quite colorless, except in the region of the ileo-cæcal valve, where they were slightly colored by bile. The chemical analysis of the different liquids and solids of the economy, by Prof. Scherer, was made particularly to search for leucin and tyrosin. It was found that—1. The urine contained leucin, and biliary pigment; neither albumen, nor tyrosin, nor tauro- and glycocholic acid. 2. The blood: leucin more abundant in the venous blood than in that of the left heart; no tyrosin nor hypoxanthin. 3. The bile: taurocholic and glycocholic acid; neither tyrosin nor leucin. 4. The spleen: hypoxanthin and leucin, little tyrosin, traces of oxalate of lime. 5. The liver: much leucin, and tyrosin, and hypoxanthin.

Professor Bamberger remarks, in regard to the etiology of acute atrophy of the liver, that the patient was debilitated by a previous disease, and had been under the influence of strong emotions. These circumstances are the only ones which had been pointed out as the cause of this disease, and they are, in fact, very usual. In the patient of Dr. Mülig they have been likewise noticed. Dr. Bühl has counted the acute atrophy of the liver under the general diseases.—(*Zeitschr. f. Rationelle Med.* New series, viii.) It is, according to this author, only one of the elements of a general atrophy of rapid course. This hypothesis, based as it is upon an isolated case, in which, besides the atrophy of the liver, atrophy of the brain and fatty degeneration of the heart was found, is in opposition to numerous facts in which the liver alone was found atrophied, and, in these cases, it is at least useless to assume a general primitive disease as cause of this atrophy. The intense yellow color of the hepatic cells yet preserved seems to idicate that the liver continues to secrete bile, at least for some time, and that some obstacle opposes the discharge of this liquid. The granulations of biliary pigment which are met here and there, speak likewise in favor of this hypothesis. But this obstacle can have its seat evidently only on a level with the origins of the biliary ducts, because in the rest of their course they are found permeable. Now, in the second case, the destruction of cells existed particularly on a level with the periphery of the lobules, that is to say, in the points where the biliary ducts originate, according to Kölliker, without communicating directly with the cells of the centre. It can thus be assumed that these ducts are obliterated by the molecular detritus of the destroyed cells, or that the bile secreted in the middle of the lobules cannot be any more conducted to their periphery by means of imbibition. The cause of the destruction of the cells Professor Bamberger considers to be an acute parenchymatous inflammation; a process probably takes place analogous to that observed in Bright's disease, in which the inflammation is likewise accompanied by a fatty infiltration, and then, by the destruction of the cells, having charge of the secretion.—(*Verhandlungen der physikalisch-medizinischen Gesellschaft in Würzburg.* 8vo., pp. 268 and 281; *Gazette Hebdom.* of July, 1858.)

X.—*On Nutmeg Liver.* By DR. ANT. REZZONICO, of Milan.

After a short review of the more recent views on the structure and functions of the liver, as well as on the so-called nutmeg liver, the author dwells upon the changes in the circulatory and respiratory systems accompanying the last-mentioned condition of the liver. Dr. Rezzonico has made the autopsy of forty patients who died of diseases of the heart and lungs, and arrived at the following results:—The nutmeg liver is found nearly constantly in tuberculosis, (among twenty-four tuberculous subjects, nineteen times nutmeg liver, three times fatty liver, and twice tuberculosis of the liver;) on the contrary, rarely in diseases of the heart, (twice in eight cases;) in patients of the latter kind, a congested or hypertrophic condition of the liver is more frequent. Nutmeg liver was found in three cases of emphysema, and not at all in acute diseases of the lungs. Neither with fatty nor nutmeg liver did the patients complain during life of symptoms from this organ. Dr. Rezzonico believes that the myristicatio hepatis is only a physiological condition, a consequence of excessive action the liver has to take upon itself, in order to compensate for the diminished functions of the diseased lungs. The greater amount of blood carried to the organ in consequence of it, brings about a more active nutrition, and an enlargement of the secreting gall-ducts. The fact that in infants nutmeg liver is not observed, in spite of the increased activity of the organ, appears not to be contradictory to this view; it follows from the chronic course of the causal diseases, that a longer space of time is necessary to develope myristicatio hepatis. In infants the increased activity of the liver lasts only a short time, after which heart and lungs resume their normal functional state; the liver obtains thus a period of rest, during which a diminution of its volume takes place.—(*Ann. Univers.*, Gennajo, 1858.)

XI.—*Observations on Cholera.* By PROF. LEBERT.

Prof. Lebert has laid down his observations, made during the late cholera epidemic in Zürich, in the following report:—In one-third of the cases, the usual antecedent diarrhœa was absent, and equally so in patients who recovered as in those who died. If it was present, its duration was generally between one and three days; in nearly one-fourth of the cases, however, between half a week to a whole one. The temperature never fell as much as it appeared, generally not underneath 27·2° R., only once to 24·8° R. In one case the face and extremities appeared warmer to the touch of the hand than immediately before death. Although the suppression of urine was generally complete in bad cases, Prof. Lebert has, nevertheless, observed a fatal issue in cases in which urine was voided. In six patients who afterwards recovered, he found the urine merely reduced in quantity, and containing albumen. The secretion of urine commonly appeared again in the course of the third or fourth day, in only one case after four, and in another after six days. The typhoid course of the disease seems to be owing more to the entire pathological process, than especially to uræmic intoxication. In reference to *pathological anatomy*, the rarity of diphtheritic processes is to be remarked; only once, croup of the larynx and œsophagus occurred, and in only one patient recent tuberculosis set in. Among the more frequent anatomical changes found in cases of rapidly fatal termination, Prof. Lebert points out particularly the injection of the peritoneal surface of the small intestines, which was often covered with an adhesive secretion. After an early death, Brunner's duodenal glands were always found to be swollen. The isolated and agminated glands had a muddy, milky appearance, and were tumefied, but did not show real signs of inflammation, and could be injected with perfect ease; they were apparently œdematous, and the molecular nucleoli and nuclei seemed to be augmented. A decrease in their tumefied condition took place sometimes as early as from twenty-four to forty-eight hours, in other cases not after three days; they became then more flat, somewhat corrugated, some time afterwards firm, granular, still prominent, but diminished in circumference; their color was then more yellowish-gray, and assumed, some time later, in many cases a slaty tint; in other cases, a grayish-black, brown, or reddish-brown pigment was found on these glands, particularly if ecchymoses had formerly existed; in the second week the tumefaction usually disappeared, and an increased density and abnormal pigmentation only remained. In the first period, the patches of agminated glands showed frequently a net-like appearance. Also in the large intestines, the glands were swollen, prominent, lenticular, or having a blackish or reddish aperture; at a later period they decreased in size, and revealed retrogressive changes similar to the glands of the small intestines. Already, sixteen to twenty-four hours after the commencement of the disease, the volume of the kidneys had increased; they were in a state of general hyperæmia, with ecchymoses here and there; as early as the second half of the first day, Prof. Lebert found the cortical substance discolored, but otherwise merely increase of the epithelial cells, with albuminous granules; only in rare cases exudation cylinders in the uriniferous tubes. In the course of the second day these cylinders increased in quantity; on pressure, a turbid albuminous urine containing cylinders, and sometimes crystals of uric acid, was discharged from the papillæ; the mucous membrane of the pelvis of the kidney and of the calices was usually very hyperæmic, covered with numerous minute ramifications of vessels; in the course of the third day the discoloration was more constant, more general, and well marked; the cortical substance was of a pale, yellowish color, and granulations were seen in it here and there; the hyperæmia was unequally distributed; the surface became unequal and rough; about this time the secretion of urine generally reappeared, being charged with albumen, cylinders, epithelial cells, and crystals of uric acid; the exuberant growth of cells, the desquamation of epithelium, and the formation of exudation cylinders had reached a certain intensity. Only in the course of the third day, and toward its end, the fatty degeneration commenced. In the typhoid state, and generally in incomplete convalescence, these changes rapidly increased; the kidneys were larger than in normal condition; the vascular islets became rarer and rarer; the granulations more and more numerous; the substance of the kidney became softer, was more easily torn, and infiltrated with a turbid, yellowish liquid containing numerous elements of fat. On *chemical investigation*, the liver of a patient who had died some time after the attack, yielded an alcoholic extract which possessed a peculiar urinous odor, and contained much leucin; the presence of tyrosin and urea could not be satisfactorily proved. In another case in which the disease had terminated fatally within eight days under the appearance of typhoid symptoms, the liver, spleen, and kidneys were examined. The extract of the liver had not the urinous odor, and only after having stood for some time, a globule of leucin was here and there detected; tyrosin was not present; uric acid only in small quantities. The spleen contained leucin, inosit, uric acid, and biliary pigment; the kidneys a great portion of urea, some leucin, biliary pigment, uric acid, no inosit. In regard to *treatment*, Prof. Lebert recommends to pay particular attention to the diarrhœa from the beginning; in many cases Argent. Nitr., gr. ss to grs. iij daily, in the form of pills, was sufficiently efficacious, and was used in case of very exhausting evacuations, in small clysters containing grs. iij—iv of the salt. Also opium was used in different forms, partly alone, partly combined with tannic acid and Argent. Nitr. During the attack itself, ice, and liquids containing carbonic acid, brought the greatest relief; large sinapisms were applied to the epigastric regions and the extremities. Clysters of Argent. Nitr. and opium appeared to be of use only after the great frequency of the evacuations was somewhat diminished. Toward the end of the attack, small doses of opium in Infus. flor. Tiliæ were sometimes very serviceable. For the decrease of temperature, external heat and tea of lime-blossoms, with fifteen drops of Liq. Ammon. anisat. for each cup, were ordered. During the existence of typhoid symptoms, the nausea and anorexia were allayed by Seidlitz powder, ice, carbonic acid water, and later, by bitter and aromatic infusions. Gentle cathartics, particularly pills of rhubarb and aloes, were here of use. Enemata containing ether (Aether. Sulphur, ʒj–ij to ice water, ʒiv,) were applied with great success in very troublesome tympanites with abdominal pain. Inflammatory affections of the chest were treated with cups and Inf. rad. Ipecac.—(*Virchow's Archiv. für Patholog. Anatomie*, &c., 1858, xiii. 2 and 3.)

XII.—*On Prolonged Constipation.* Reported from the Clinic of PROF. TEISSIER, by DR. COUTAGNE.

Throwing the constipation resulting from organic lesions of the intestines out of consideration, Dr. Teissier establishes the following varieties of constipation, which are founded on the causes they are produced by. Constipation can thus depend—1. Upon alteration of the mucous secretion, such as diminution of the intestinal exhalation, or modification in the composition of the mucus, etc.; 2. Upon functional disorders of the liver, which does not pour out a sufficient quantity of bile into the intestines; 3. On inertia of the intestinal contractility; 4. On a spasmodic state of the muscular coat of the intestines. The most frequent cause of constipation is the indolence and inertia of the muscular fibres of the intestine. This variety is frequently combined with those which result from derangement in the digestive secretions, and is observed ordinarily in old people, in persons of sedentary habit, and those who repose too much in bed. After a review of the well-known symptoms of constipation, Dr. Teissier considers the treatment of the disease, which he bases upon the etiological distinctions established above. For constipation, in consequence of alteration of the mucous secretion, he recommends emollient injections with honey or oil, and light laxatives. For constipation from derangement of the biliary secretions, drastics, rhubarb, aloes, calomel, extract of ox-gall, etc. In habitual constipation dependant upon indolence of the intestine, Dr. Teissier objects to the use of purgatives, and even to warm emollient enemata or laxatives, as they only augment the evil; purgatives excite the intestinal secretion only momentarily to diminish, and even suspend it afterwards, while warm and emollient injections, although bringing temporary relief, tend to weaken the intestinal tunics, and to put them in a state of atony. For patients of this kind M. Teissier recommends—1. To regulate the habit of the intestinal functions by going to stool each day at a fixed hour, and making prolonged efforts to provoke contractions of the large intestines, as recommended by M. Trousseau; 2. Injections of cold water; 3. Nux vomica in very small doses each morning; 4. The *tea of Saint-Germain*, which Prof. Teissier considers one of the most efficacious remedies, having used it for ten years with great success. The original formula, which we copy from Hufeland's "Enchiridion Medicum," is the following:—

℞.—Folior. senn. ℥iv;
Diger. cum spirit. vin. rectif. per
Horas xxiv. Post digestionem exsicca
Sine calore. Adde
Flor. sambuc. ℥ijss;
Semin. fœnicul.
——— anisi āā ℥j;
Cremor. tartari ʒvi.

S. An infusion to be made with five cups of boiling water on two ounces of these ingredients. Digest for ten hours with gentle heat without boiling, and then decant the clear liquid, of which half a cup is to be taken every morning. 5. Coffee with milk; 6. Bran-bread; 7. White mustard; 8. Ervalenta. For the treatment of constipation dependant upon nervous erithism of the intestines, a form frequently met with in hysteric, neuropathic females, the best remedy is belladonna in fractional doses: one centigramme of the extract every day.—(*Gazette Medic. de Lyon*, and *Gazette Hebdom.*, 25th June, 1858.)

XIII.—*On the Observations of Temperature in Patients.* By PROF. C. A. WUNDERLICH and DR. L. MEYER.

Already during the last century several eminent physicians endeavored to ascertain the temperature of the body in different diseases. These efforts, however, were soon abandoned again, and only quite recently the thermometric observations in patients have again received that attention which they so much deserve. Prof. Wunderlich has, in this respect, a rich experience at his command; accurate thermometric observations were regularly made in his clinic in more than 5000 patients during the whole course of their sickness, and also in private practice he has convinced himself of the practicability and usefulness of this means of investigation. He considers himself justified, therefore, to pronounce the view so generally taken, and recently advanced again by Lasègne, (*Arch. Génér.*, May, 1856,) that thermometric investigations would never become very important to pathology, as perfectly erroneous. It is true, that for the theory of diseases these observations of temperature have remained as yet without direct use, and that they do not throw much light at present upon the nature of fever, inflammation, etc., but also in reference to theory they have afforded facts which are of great consequence for many important questions in relation to pathological physiology. Of far greater importance, however, are they in a *practical* point; Prof. Wunderlich considers them even of more value than most of the other means of investigation, provided that also in local diseases the part taken by the whole organism is considered of sufficient moment. As proof of his statements, the author gives the following facts:—

1. The observation of temperature offers the most reliable means for deciding *the importance of a disease of recent origin;* with normal, or but little elevated temperature, the disturbances of health are, with some exceptions, (cholera, apoplexy, pulmonary hemorrhage, strangulated hernia, poisoning, etc.,) first of all of no importance; an elevation of 2° R. or more, announces, however, with certainty, the commencement of a serious disorder. This circumstance is a valuable guide, particularly in cases of children, in which, as is well known, an insignificant disease is frequently accompanied by violent symptoms, as also in reference to the continuation of the patient's business, to his departure, or transport, etc.

2. The observation of temperature points out frequently *important, though still latent disturbances;* an indisposition with much elevated temperature deserves always particular attention; in the state of reconvalescence from serious

diseases a relapse, or a secondary disease, is frequently indicated first by an elevation of temperature. This is particularly the case in typhus; but also in intermittent fever an elevation of temperature without any other symptoms is frequently observed after an apparent cure, and a relapse can then only be prevented by continuing the use of quinine.

3. If the disease is developed the observation of temperature offers *the most reliable indications for the diagnosis.* Diseases in which the diagnosis of particular forms of the same or other of pathological processes can be decided in this manner are, according to Prof. Wunderlich, the following:—typhus, (exanthematic; enteric;) intermittent fever; pneumonia; meningitis, (at the base; at the convexity;) serous and purulent effusions in the pleura or pericardium; acute exanthemata; internal suppurations; peritonitis, (in lying-in women.)

4. The diagnosis being decided, thermometrical observations are of the geatest use in reference to the *prognosis. Intensity* and *character* of the disease, *its stage* the commencement of a complication which is often not indicated by any symptom, the usual *aggravation* and *increase* of the malady, as well as its *decrease*, can be recognized, as the author proves by many examples, the earliest and surest, sometimes even solely by the behavior of the temperature of the body. A certain height of temperature (about 34° R.) indicates, with certainty, a fatal issue; perseveringly high temperature (over 32·5°) makes the prognosis always more serious; a falling of temperature in a proper manner, however, permits predicting a favorable turn of the disease. In the state of *convalescence* changes of the temperature of the body deserve no less consideration as a means by which to recognize deviations from health, otherwise hardly perceptible. Insufficient falling of temperature indicates, in spite of apparent convalescence, an incomplete cure, and gives reason for fearing the development of a chronic disorder; even a small increase of temperature challenges precaution in regard to diet and regimen of the convalescent.

5. Another great advantage derived from thermometric observations is the proof of *a regular typic course of numerous febrile diseases;* it is true that physicians of a former period supposed it to exist, but it cannot be demonstrated with certainty but by accurate observations of the changes of temperature of the body. In the same way *deviations* from this regular typic course are best recognized by the use of the thermometer, and we are thus enabled to avert them by removing the causes, to neutralize their consequences, or also, as many of such irregularities are of a more favorable character than the normal course of the disease, to bring them on by therapeutical means.

6. From what has been said, the importance of thermometric observations for *therapeutics* is evident enough; they indicate where energetic interference is necessary, and when the disease may be left to itself again. The thermometer gives us, however, also reliable and accurate information in regard to the efficacy of certain remedies and methods of treatment used; for instance, on the effect of general bleeding, of calomel, digitalis, camphor, an emetic, and other energetic means in febrile diseases. The observations of temperature have, as the author shows, so great a value for therapeutics, particularly for the reason that the indications for treatment have more frequently to be derived from the gene-

ral condition of the patient than from so-called local disturbances which usually disappear spontaneously, and in which direct interference is not of much benefit. —(*Arch f. Physiol. Heilk.*, N. S. 1, p. 5.)

Dr. Meyer considers observations of temperature in insane patients of very great use, as they aid the physician in determining whether there exists a direct disease of the brain, or whether the latter is affected merely by reflex action from another organ. In the former case a corresponding change of temperature is observed; if the delirium is accompanied by elevation of temperature without remission, a direct irritation of the brain exists. In reflex alienations, however, this change of temperature does not take place; if the temparature rises in these cases, it indicates the occurrence of a complicating disease. These statements, the importance of which for the prognosis and therapeutics of mental diseases is very evident, the author proves by a condensed report of numerous cases, (mania, progressive paralysis.) As the peculiar character of insane patients does not permit a long continuance of the usual mode of observation, viz., by placing the thermometer in the axilla, he prefers to insert it into the rectum.—(*Deutsche Klinik.*, 13, 1858; *Schmidt's Jahrbücher*, 6, 1858.)

MATERIA MEDICA.

XIV.—*Argenti Nitras in Oxyuris Vermicularis.* By DR. C. H. SCHULTZ.

The author ordered enemata of Argent. Nitr. crystal. grs. x–xv, to aq. destil. ℥iv, and cured his patients, with two or three injections of this kind, completely, and without trouble. The first injection does usually not remain long, and with it many partly dead, partly living worms, are discharged. The subsequent clysters, however, remained six to twenty-four hours, and a great number of dead worms were evacuated with them.—(*Deutsche Klinik.*, 17, 1858.)

XV.—*Iodide of Potassium as Antigalactic.* By PROF. ROUSSET.

The troublesome milk-knots which like to appear especially at the commencement of lactation, giving rise to fever, inflammation of the breast, and abscesses, indicate a diminution of the secretion of milk by therapeutic means. As the usual measures, emollient cataplasms, dieting, and laxatives, are frequently insufficient, the author tried the iodide of potassium with the following results: The iodide of potassium occasions a considerable decrease of the milk, and in consequence of it prevents and removes milk-knots, particularly if at the same time the child is not put to breast. The milk returns quickly, if the medicine is not used any longer than two to three days; its effect is more decided if the dose does not exceed forty to fifty centigrmm. daily. The secretion of milk can be prevented almost completely if the iodide of potassium is given on the first or second day after delivery. The author gives a full report of seven cases to confirm the above statements.—(*Journal de Bordeaux*, May, 1858.)

XVI.—*Cerate of Opium in Carbuncle.* By DR. W. VON GUTZEIT.

A cerate containing one-half drachm of opium to two ounces of simple cerate, is spread thickly upon linen and applied to the swelling and its neighborhood. This application diminishes pain quickly, generally in about half an hour, hastens suppuration, the detachment of the slough, and the cicatrization of the suppurating surfaces, and ameliorates the general condition of the patient. No medicine was given internally. The opiate cerate can be used at any stage of the disease, and its curative effect seems to surpass that of every other known remedy.—(*Medic. Ztg. Russl.*, 12, 1848; *Schmidt's Jahrbücher*, 8, 1858.)

Bi-Monthly Periscope.

SURGERY.

CASES ILLUSTRATING THE TREATMENT OF SPINA BIFIDA.

CASE I.—LARGE LUMBAR SPINA BIFIDA; TREATMENT BY LIGATURE; DEATH. Under the care of *Mr. Paget.*—Alice Bagster, the subject of the following case, first came under our notice on June 24, 1854, at the City Hospital for Chest Diseases, where her mother was in attendance as an out-patient on account of phthisis. She was then aged three months, and a remarkably stout, healthy-looking infant. Over the lumbar spine was a tumor the size of her head. There could be no doubt about the diagnosis; there was free fluctuation; the tumor was transparent, and its communication with the spinal canal might be proved by making pressure upon it, when the fontanelle, ordinarily depressed, filled out and became prominent. The child was good-tempered, appeared intelligent, and had a well-formed head. It had perfect use of both lower extremities, but there was a slight, and perhaps doubtful, degree of inversion (varus) of the right foot. No symptoms of nervous disease had ever been present. The mother stated, that when born the tumor was about the size of a large fist, and her impression was that it had increased much more than in proportion with the infant's growth. It was now nearly as large as an infant's head; the circumferential measurement was thirteen inches, that over its highest part seven inches and a half.

A consultation on the case took place, at which Dr. Bennett, Mr. Hilton, and the writer, were present. Dr. Bennett was not inclined to attempt any radical measure, and suggested the trial of iodine counter-irritation externally, together with the use of mechanical support to the sac. Mr. Hilton related a case which had occurred to himself some years ago, in Guy's Hospital, in which he had dissected away the greater part of the cyst, and attempted to unite its edges by means of sutures. The result, inasmuch as death from spinal arachnitis had ensued, was not encouraging to the trial of similar means. The propriety of practicing occasional puncture of the sac was also discussed, and finally it was decided that a gutta-percha case should be made to be worn well-padded over the tumor, and if, in the course of time, an irrepressible tendency to increase should be shown, that puncture should then be resorted to. It was accordingly explained to the mother of the patient that the best to be hoped for was, that the child might grow up with the tumor no larger than its present size. This intelligence did not seem agreeable, and a strong desire was expressed that at any risk a cure should be attempted.

On July 16th, we met the little patient and her mother in Queen's-ward, St. Bartholomew's Hospital, where she had been admitted on the previous day under the care of Mr. Paget. The parents were now decided on having some operation attempted, and stated that they would prefer even a fatal result to the altenative of life with so serious a deformity. The size of the tumor had not materially increased, and the child's condition was much as above described. The tumor measured thirteen inches round its circumference, and eight over its greatest height. Pressure did not diminish its size or produce any appreciable disturbance of the nervous functions. Mr. Paget stated that the absence of any effect from pressure, and the possession of full nervous power over the lower extremities, induced him to believe that the neck of the sac must be small, and that the sac itself did not probably contain nerves. A consultation on the case was held, and Mr. Lawrence and Mr. Stanley having expressed opinions in concurrence with that of Mr. Paget, it was decided to attempt a radical cure: the great risk incident to such a procedure was fully explained to the parents. The plan which Mr. Paget determined to practice was the subcutaneous division of the neck of the sac by means of a ligature. It was hoped that by this means the communication between the sac and the spinal canal might be obliterated by the effusion of lymph which would be caused.

On July 26th, the operation was accordingly performed. The child having been put under the influence of chloroform, a strong double silk ligature was passed subcutaneously around the tumor, the ends being finally brought out in the middle of its upper part. The ends having been loosely tied were attached to a band of elastic webbing, and the latter fixed in a state of tension, by means of a bandage passed round the chest. It was hoped that the elastic band would gradually drag the ligature through, and so make a section of the base or neck of the tumor. The performance of the operation was not attended by any difficulty. During the three days following it the child suffered no symptoms other than restlessness, apparently from the pain which the ligature gave.

On the second day there had been a little redness around the border of the tumor; but this had almost disappeared on the third. The ligature had been drawn out at the rate of half an inch daily; there was free suppuration along its track.

On the fourth day the infant appeared feverish, restless, and ill, and rather less of the ligature was, in consequence, drawn out.

On the fifth day the child's condition was much the same. Some clear fluid, as if from the sac or spinal canal, was flowing from the wound at which the ligatures escaped. It appeared as if two or three drachms had so escaped: but the sac was still tense, and its contents quite translucent; it was not reddened or hot.

During the sixth and seventh days the child continued in much the same state, but got more feeble. At times it appeared much sunken, and almost insensible, and the mother believed that it could not see. No convulsions occurred. Throughout it had taken the breast greedily, and still continued to do so.

On the eighth day death occurred. For some hours before, the child's state had been one of almost insensibility.

Permission to make a post-mortem examination having been at first refused by the parents, and the body removed from the hospital, three days elapsed before the inspection was obtained. It was ultimately made by the writer, at Mr. Paget's request. Only the tumor was allowed to be examined.

The tumor was much less tense than during life, and its lower half, and, indeed, the parts about its base generally, had acquired a remarkable feeling of solidity. Compression of the tumor did not not decrease its bulk, but there flowed from the wounds a small quantity of thin, serous pus. A longitudinal section of the whole mass having been made nearly down to the vertebræ, a relation of parts, as represented in the appended diagram, [which we have been compelled to omit.—EDS.] was found. The larger cyst was about capable of holding a duck's egg. It was lined by a smooth, glistening membrane, of fibrous structure, and which could be easily peeled away from the structures with which it was in contact. This membrane, when held up to the light, was only very partially transparent; but there were no evidences of its containing nerve-trunks in any part. The cyst was quite whole in every part, and contained a perfectly clear serous fluid. At first sight it did not appear to communicate with the spine; but, on probing, an opening, covered by some valve-like folds of its lining membrane, was discovered, which led into a smaller cyst. The latter cyst about equaled a half-walnut in size; its base opened freely into the spinal canal, and the trunks of nerves passed out therefrom in a curved direction, and adhered to its walls. There were no traces of the results of inflammation in either cyst or in the spinal canal, excepting that in the latter the small vessels were deeply injected. The laminæ and spinous processes of the last two lumbar vertebræ were wanting. Surrounding the cysts in every part, but especially abundant behind, was a thick layer of dense granular fat, and in this the track of the ligature had run. The ligature had nowhere quite touched the walls of the cyst, but on the right side it was very near to them; posteriorly it was fully half an inch distant. Imbedded in the fat over the sides of the cyst were two small plates of cartilage, one on each side, evidently the displaced and undeveloped laminæ of one of the vertebræ.—*Medical Times and Gazette*, July 24, 1858.

CASE II.—LUMBAR SPINA BIFIDA OF CONSIDERABLE SIZE; SPONTANEOUS CONTRACTION; DEATH FROM HYDROCEPHALUS. Under the care of *Mr. Lawrence.*—The coexistence of hydrocephalus with spina bifida is far from infrequent, especially in the worst class of cases. The frequency strongly supports the opinion that these defects of development are due to intra-uterine arachnitis, and are not mere arrests of vertebral ossification. Thus the effusion into the sac of the spinal cord takes place in consequence of a transitory inflammation at a period of fœtal life prior to the firm junction of the laminæ with their corresponding bodies. By this effusion the laminæ are displaced so wide that union is rendered impossible, and a permament defect is caused. In support of this theory of the formation of a spina bifida, we have the circumstance, that plates of cartilage, constituting the laminæ, are not unfrequently found in the soft structures overlying the cyst. This was observed in the case just recorded. Another fact in support of the same view is, that now and then, when hydrocephalus and spina bifida are coexistent, the one will subside greatly while the other increases. This was observed in the following case:—

Anna B., a puny child, aged two months, attended for some weeks, during 1853, as an out-patient under Mr. Lawrence's care, on account of a spina bifida over the lower lumbar region. The tumor was the size of a child's fist, and the skin in the middle was thin, and at one time threatened to give way. There was imperfect talipes varus of both feet. From birth the head had been noticed to be large, and at the age of one month it began to increase rapidly. Mr. Lawrence declined to adopt any operative measures, and the tumor was merely protected by a pad of cotton-wool. The hydrocephalus increased to such an extent that the child was, after a time, unable to be brought out, and her case was, with Mr. Lawrence's permission, afterwards watched by the writer and his friend, Dr. D. H. Tuke, at her own home. No active remedial treatment was adopted, and the head continued slowly to enlarge. The spinal tumor, however, shrank away, the integument over it becoming thick and wrinkled. When at length the infant died, (at the age of nine months,) its position was only marked by a piece of thick, very brown skin, overgrown with short, coarse hair. On laying it open no fluid was found in what remained of the sac, the cavity of which was very small indeed. The lateral ventricles of the brain were found to be laid into one by the destruction of the septum lucidum, and contained between one and two pints of clear straw-colored serum.

It had been noted in this case that there was no reason to believe that the lumbar sac communicated directly with the fluid in the head, as pressure upon the one did not in any way influence the other. At the autopsy, the canal in the centre of the cord, which, in certain cases of this class, is found open, affording a free channel of communication between the arachnoid cavity of the cord and the cerebral ventricles, was found obliterated. To its obliteration, no doubt, was due the fact that cyst contracted while the ventricles were filling. An interesting example of the reverse was under the notice of the writer about a year ago, and was recorded by him in the last volume of the *Pathological Society's Transactions*. In it the spinal tumor increased until it gave way, while the cerebral distension was also steadily advancing. The autopsy demonstrated a most free communication between the two.—*Ibid.*, July 24, 1858.

CASES III. and IV.—SPONTANEOUS RECOVERY FROM SPINA BIFIDA.—The particulars of two cases have been mentioned to us in conversation by Mr. Wormald and Dr. Moore, in which spontaneous shrinking of the spina bifida cyst took place. Neither gentleman, however, was in a position to give us more than a few facts from memory; the cases are, however, of too much interest to be passed over in silence. In Mr. Wormald's, the patient was a male infant, who attended as an out-patient at St. Bartholomew's. The tumor from the first was a very small one. It was situated over the lumbar region. A metal shield (lead) was constructed to protect it, and by means of cotton-wool within this and a bandage over it, moderate pressure was kept up. The cyst gradually shrunk until it became imperceptible, and the skin of the same level as that surrounding it. The skin remained somewhat thickened. Mr. Wormald saw the child last when it was between two and three years old, at which time it remained quite well.

In Dr. Moore's case Mr. Wormald also was consulted. The tumor was over the lumbar spine, and the size of a large egg. Within a few months of birth it ulcerated and oozed a great deal, after which it very gradually lessened, and finally disappeared. It had been throughout supported by a leather pad and cotton-wool.—*Ibid.*, July 24, 1858.

CASE V.—SPINA BIFIDA IN THE ADULT; PUNCTURE; OPISTHOTONOS; DEATH FROM SPINAL ARACHNITIS. Under the care of *Mr. Tatum.*—Llewelyn M., aged twenty, a Welshman, was admitted into St. George's Hospital in the latter part of 1856, on account of a pedunculated tumor over the sacrum. He could not speak English, and the account obtained was imperfect; but it appeared certain that the tumor had existed from birth, and had gradually increased in size. There had never been any pain or disturbance of the nervous system, excepting on two or three occasions, at distant intervals, when the skin had ulcerated. At these times it was said that involuntary movements of the limbs had been noticed, and the fæces had passed unconsciously. The tumor was larger than a man's head, and was attached by a broad, short peduncle over the middle of the lower part of the sacrum. Fluctuation was distinct. The skin was ulcerated in two or three places from the friction of the clothes, and was also crossed by numerous large tortuous veins. The tumor caused no inconvenience, excepting from its unwieldy bulk, and the man seemed to be in good health. He was, however, very anxious to have something done which might rid him of his incumbrance.

In the first instance an exploratory puncture with a grooved needle was made. The fluid obtained was clear, and of a light-brown color, differing from blood-serum in containing much less albumen. It was now determined, after consultation, to try the effects of tapping.

A few days after the puncture a trocar was introduced, and about half a wash-hand-basinful of fluid withdrawn. The tumor was by this means much reduced, but still remained nearly the size of a head.

On the second day after the tapping erysipelas appeared around the puncture. Pain was also complained of in the head and abdomen, and it was noticed that the head was kept drawn backward. The pulse was rather feeble, but there was no marked constitutional disturbance.

On the next day, however, the head was still more retracted, and the urine and fæces passed involuntarily. No muscles were rigid, excepting those of the back of the neck. The opisthotonos increased, so that, on the third day of the attack, the head was noticed to be so much pulled back as to make almost a right angle with the back. This position was not altered during sleep.

On the sixth day after the tapping the tumor gave way, by the ulceration of the wound made by the trocar, and its contents were evacuated. The erysipelas had by this time passed off, but the opisthotonos had continued, and the man's strength had rapidly failed. Death took place the same evening. The treatment had consisted in the exhibition of the bichloride of mercury.

At the autopsy the lining membrane of the sac was seen to be highly vascular, and coated in places with lymph. At the upper part of the neck of the sac was an aperture, apparently in the situation of the natural orifice of the sacral canal, and leading into the sub-arachnoidean space. The bones seemed perfectly ossified. The membranes of the cord were thickened, and from their lower extremity to the mid-dorsal region contained a collection of pus. The cord itself, where surrounded by pus, was much softened, but in others was quite healthy. None of the spinal nerves passed into the sac. There was a large quantity of cerebro-spinal fluid, which was opake, and of a dull-gray color. The brain and other viscera were healthy.

We have condensed the above account of this interesting case from the report given of it by Mr. Holmes in the *Pathological Transactions*. The case proves —1. That the subjects of spina bifida may attain adult life; 2. That the enjoyment of good health is compatible with the existence of a large tumor of this kind; 3. That spontaneous ulceration and drainage from the cyst may occur without inducing serious consequences; 4. That artificial evacuation may produce a fatal result.—*Ibid.*, July 24, 1858.

CASE VI.—SPINA BIFIDA, WITH HYDROCEPHALUS; PARACENTESIS; DEATH.— We may here suitably mention a case, though not in hospital practice, which may be found in vol. viii. of the *Transactions of the Pathological Society*, which was treated by puncture. The infant was born with a sacral spina bifida of considerable size. Its frontal suture was also open, measuring half an inch at the nose, and fully two inches at its widest part. Both feet were slightly incurved, the right most so, the right leg being atrophied. The child was well nourished, and did not appear to suffer any inconvenience from the tumor, except when pressure was made on it. Puncture was practiced when the child was a week old, and was repeated once or twice afterwards. The child died in the ninth week, having previously had convulsions. It does not appear from the narrative that any ill consequences were attributed to the puncture; on the contrary, it is stated that temporary relief was afforded. The case was under the care of Dr. W. Ogle.—*Ibid.*, July 24, 1858.

CASE VII.—LARGE SACRAL SPINA BIFIDA IN A HEALTHY ADULT. Under the care of *Mr. Hilton.*—Rebecca W., aged twenty-three, was under Mr. Hilton's care, in Guy's Hospital, during April, 1853. The ailment for which she was admitted was a fistula near the anus, which was believed to communicate with carious disease of the end of the coccyx. The circumstance which gave interest to her case was, however, that there existed a large spina bifida. The tumor, which was as large as two fists, had a broad peduncle of attachment to the left side of the spines of the sacrum, and itself occupied the upper part of the left buttock. To the touch it felt tense, and there was free fluctuation. The skin over it was loose, and might easily be pinched up. On taking the tumor in both hands, and compressing it, she complained that a disagreeable sensation of fullness in the head was caused, and that flashes of light were seen before the eyes. Many trials were made, and these symptoms were invariably produced. She was a married woman, and had borne two children, her labors having been, she said, without any unusual occurrence. She was obliged to be very careful how she sat down, for fear of injuriously pressing the tumor, but the sensations in the head always gave her warning when it was squeezed. She had never suffered any further inconvenience from it beyond these peculiar head-sensations, excepting on one occasion, when, having fallen out of a swing, and struck the tumor, she was for a fortnight unable to stand, and during the first part of the time could not even move her arms. Having kept her bed, however, for some weeks, these symptoms gradually passed off. She was of sanguine temperament, cheerful, and of active habits, and had, on more than one occasion, taken long sea-voyages. It did not appear that in infancy the tumor had caused any symptoms. It had been noticed immediately after birth, and several medical men were then consulted about it. At a subsequent period she was taken to the late Mr. Key, who strongly advised her that no interference should be permitted. There had never been any degree of clubfoot. The fistula for which she now came under care, had resulted from an abscess near the rectum, which had formed during her homeward voyage from America about two months before her admission. It did not appear to be in any way connected with the spinal tumor.

The only parallel to this case in respect to the large size of the tumor, the entire absence of symptoms, and the age of the patient, which has ever come under our notice, is the one cited in a previous part of the series, (*Case* 5.) In the present case, the tumor, from its lateral position and smaller size, caused much less inconvenience than was experienced in the other. There was no temptation to interfere; for the woman really suffered nothing from it, and was competent to all the duties of her station, and the full enjoyment of life. Such instances are, doubtless, very rare, though probably not quite so nearly unique as some might suppose.—*Ibid.*, August 21, 1858.

CASE VIII.—TUMOR, SUPPOSED TO BE A SPINA BIFIDA, OVER THE SACRUM OF A HEALTHY ADULT. Under the care of *Mr. Hutchinson*, at the Metropolitan Free Hospital.—In neither Mr. Hilton's nor Mr. Tatum's cases, above recorded, could there be any doubt as to the diagnosis. The tumor was in each of congenital origin, and there was direct evidence that its sac still communicated with the spinal theca. In the following, the tumor was of much smaller size, and the history of its having existed at birth being wanting, there still remained some doubt as to its nature. It presents, however, features of sufficient interest to be worthy of record, notwithstanding these detractions from its value.

John E., aged thirty-two, a fairly muscular man, in good health, applied, on April 14, 1857, for advice respecting a tumor which existed over the spinal processes of the middle of his sacrum. It was exactly central, and about the size of a duck's egg, but more rounded. It had an evident peduncle of attachment to the vertebræ, and gave to the finger a not very distinct impression of fluctuation. It felt, indeed, as if fluid were confined within thick and tense parietes. The solid structures appeared of varying thickness in different parts, and on the right side was what felt like a plate of cartilage. The tumor was exceedingly tender, and darting sensations in the back and down the thighs were complained of when it was pressed. The man said that he had suffered a great deal from it, both on account of pain arising spontaneously, and also from the effects of its being accidentally squeezed. He was very desirous that something should be attempted for its removal, if it could be done safely,

The history given was, the tumor had not been noticed until he was twelve years old, that it had increased slowly for the first year or two, and had latterly remained quite stationary. Two years before it was first discovered he had been under care in the Oxford Infirmary on account of a swelling on one knee, for which the knife was used, or, as he said, "a tumor was taken out." Thirteen years ago he was an in-patient at St. Bartholomew's, under Mr. Vincent's care, on account of the spinal tumor. Many consultations took place as to its nature, and he was finally told that it was in all probability connected with the spine, and, that to meddle with it would kill him. From that time to the present it had not, as far as he could tell, altered either in size or solidity.

Notwithstanding the doubt which hung about the case on account of the absence of congenital history, yet, after careful consideration of its various points, Mr. Hutchinson thought the probability of the tumor having a connection with the spinal canal was too great to allow of its removal being attempted. The man was accordingly advised not to have anything done, but to wear over it a gutta-percha cap padded inside with cotton-wool as a protection against chance pressure.

Supposing the tumor in this case to have been a spina bifida, it is probable that it was overlooked in infancy on account of its being of very small size, and that it did not materially increase until shortly prior to its first discovery. Such a history of the course of these tumors is however very unusual.—*Ibid.*, August 21, 1858.

CASE IX.—PEDUNCULATED SPINA BIFIDA; OPERATION BY LIGATURE; DEATH. Under the care of *Mr. Erichsen.*—In June, 1855, a healthy infant, aged six weeks, was admitted under Mr. Erichsen's care into University College Hospital, on account of a lumbar spina bifida. The tumor was the size of a small orange, fluctuated freely, and was translucent. The pedicle by which it was attached to the lumbar spine was not thicker than a finger. Although the tumor could not be materially diminished in size by compression, yet there seemed little reason to doubt that it communicated with the spinal theca. Mr. Erichsen adopted the ligature plan of treatment, and having passed a strong double silk through its base, tied it in two halves. A large portion of the tumor sloughed away within the week, and, up to the eighth day, the infant seemed doing well. It died, however, from the irritation caused by the operation, within the fortnight. In this case the infant was, at the mother's wish, treated, at some disadvantage, as an out-patient. No post-mortem was, we believe, obtained.

The case is interesting as an example of a very narrow pedicle in spina bifida. In all probability, the channel of communication with the spinal canal was very small indeed. One of nature's processes of cure is to close this channel altogether, thereby leaving the cyst as an isolated shut sac. Many of our readers will recollect the details of an important case brought before the Medico-Chirurgical Society about a year ago by Mr. Solly, in which a pedunculated cyst depending from the neck had been excised. At the time of the operation there was no communication whatever with the spinal canal; but in infancy it had been considered, no doubt quite correctly, to be a spina bifida. This mode of cure, although applied to a morbid condition instead of a natural one, is identical with that by which the tunica vaginalis testis becomes shut off from the peritoneal cavity. The cure, when it takes place, is probably well advanced during intra-uterine existence.—*Ibid.*, August 28, 1858.

CASE X.—LUMBAR SPINA BIFIDA; OPERATION FOR RADICAL CURE; DEATH. Under the care of *Mr. Borlase Childs*, at the Metropolitan Free Hospital.—In November of last year a healthy infant, aged one month, was admitted under Mr. Childs' care, with a lumbar spina bifida of about the size of a Seville orange. It was situated exactly in the median line, and over the spinous processes of the fourth and fifth lumbar vertebræ. It was translucent, and fluctuated freely. By pressure it was easily emptied, and the finger could then be inserted into the orifice of communication with the spinal canal, and while retained there prevented refilling of the sac. The mother stated that the child had always enjoyed good health, and was not unduly restless. It had been born at the full time, and presented no other ailment. There was no degree of talipes. The tumor had not materially increased since birth, but the integuments overlying it were very thin. The head was of natural size, and no cerebral symptoms had occurred. The parents were very anxious that a cure should be attempted, and were quite willing that any risk should be run by which such a result might be hoped for.

The operation devised by Mr. Childs was of a somewhat novel character, being a modification of the procedures of Dubourg, Tavignot, and other French surgeons, who cut away part of the walls of the sac, and then united the skin across. Mr. Childs thought that much danger might be avoided by not opening the sac itself, and proposed to dissect off the skin and remove its thinnest and central part, and then having tucked the serous membrane into the spinal canal, to unite the margins of the skin over it.

The child was put under the full influence of chloroform. The dissection of the skin away from the sac was found, on account of its thinness, and their close union, to be a matter of extreme difficulty; and before its completion the serous membrane had been pricked in one or two places, and a few drachms of clear spinal fluid had escaped. This escape made the return of the serous sac into the spinal canal more easy. An ellipitical portion of the thinnest integument having been cut away, the sound skin was brought together on hare-lip pins, and a bandage and light compress applied. The child had borne the chloroform well, and recovered from its influence very satisfactorily.

November 10 (the day after the operation).—The infant had slept fairly, taken the breast well, and showed no unusual restlessness.

11th.—An occasional twitching of the muscles of the face and arms was noticed, and the child had a peculiar startled countenance. The anterior fontanelle was bulged. The skin perspired freely, and the bowels were open. The edges of the wound appeared to be united. A powder, containing a grain of calomel was prescribed, and it was ordered that the infant should be kept in a dark room, and have an evaporating lotion applied to the scalp.

On Nov. 12, the fourth day after the operation, death took place rather unexpectedly. No vomiting, nor any positive convulsions had occurred between the time of the operation and the date of death.

No post-mortem could be obtained, but there was no doubt that death was due to spinal irritation, and in all probability conditions similar to those noted in the following and preceding cases would have been found.—*Ibid.*, August 28, 1858.

CASE XI.—LARGE LUMBAR SPINA BIFIDA; COMMENCING HYDROCEPHALUS; PARACENTESIS OF THE TUMOR; DEATH. Under the care of *Mr. Hutchinson*, at the Metropolitan Free Hospital.—A young infant, otherwise in fair health, was admitted during 1856, under Mr. Hutchinson's care, on account of a spina bifida in the lumbar region, as large as a moderate-sized fist. There was no club-foot, or other deformity, but the head was rather large, and the fontanelles were widely open. The tumor fluctuated freely, and was translucent. By pressure it could be considerably diminished in size, but refilled as soon as the hand was removed. The skin over it was thin, but quite sound. Its base was as large as any other part. It was in the first instance not intended to adopt any surgical measure for its treatment, and a cup of gutta-percha having been fitted to it as a protector against injury, the parents were apprised of the danger incident to interference, and were told that the best that could be hoped for was that it would not increase.

For several months the child attended regularly as an out-patient, and all did well, no perceptible increase of the tumor taking place. When, however, at the age of seven months dentition commenced, both the tumor and the head underwent rather rapid increase of size. The infant also suffered from slight convulsions, diarrhœa, and other signs of cerebral irritation. At length, the tumor having become tense, almost to bursting, it was determined to relieve it and the head also by tapping. This was done; a small exploring trocar was introduced, and about eight ounces of clear spinal serum drained away. The canula having been removed, the puncture was covered by plaster, and the whole tumor, now flaccid and loose, was supported by a pad of cotton-wool placed inside the gutta-percha shield. The infant had borne the operation well, and during that and the following day it seemed relieved by it rather than otherwise. Subsequently, however, symptoms of spinal irritation, restlessness, twitching of the limbs, etc., developed themselves. There was nothing, however, to excite unusual alarm, until on the tenth day convulsions occurred, in one of which ultimately death took place.

At the autopsy, the cyst was observed to have refilled but very little since the operation. It was still flaccid, and almost empty. On laying it open, however, it was found to contain several tablespoonfuls of creamy pus; and adhering to its lining membrane and to the arachnoid of the spinal canal were many films of effused lymph. Only a few nerve-twigs of very small size could be traced passing out from the theca into the interior of the cyst. The inflammation of the spinal membranes did not extend more than about two inches from the entrance to the cyst upward toward the head.—*Ibid.*, August 28, 1858.

CASE XII.—LARGE SPINA BIFIDA; PUNCTURE; BURSTING OF THE TUMOR; DEATH. Under the care of *Dr. Barnes*, at the Royal Maternity Charity.—

May 11th, 1858.—A full-sized male child born yesterday. There is a tumor extending from the upper part of the sacrum to the dorsal vertebræ, about two inches and a half in diameter. The circumference is formed by a projecting ridge or roll of skin. The covering of the tumor does not present the appearance of skin, but of a thin membrane. The tumor is irregular, presenting elevations and depressions; and in color and form resembling a knot of congested piles. The spinous processes of all the lumbar vertebræ seem deficient.

On the following day the sac became distended with serum to the size of an orange.

On the 14th, the distension had increased, and threatened to ulcerate the sac, which was highly inflamed and excoriated in patches. The sac was now punctured, and two ounces of straw-colored fluid escaped. On the 15th, the sac had filled again; it was so tense that on the 16th it burst. After bursting, the child was frequently convulsed. On the 17th, I witnessed a fit. The arms were stretched out forward, and rigid. The child cried as if in pain and terror, and there was a little foam from the mouth. The mother thinks the legs have been powerless from birth.—18th. Died after repeated convulsions, which were limited to head, arms, and trunk. The legs seemed paralysed. No autopsy.—*Ibid.*, Sept. 11, 1858.

2. ACCOUNT OF SOME TRIALS MADE TO FACILITATE THE REMOVAL OF STONES FROM THE URINARY BLADDER; EXTRUSION WITH THE FINGERS; LANDING-NET. By *Professor A. Buchanan, M.D.*, one of the Surgeons to the Glasgow Royal Infirmary.—Among the advantages which attend the rectangular operation of lithotomy, one is to render more easy the extraction of the stone in the ordinary way, with the aid of the forceps. This depends upon the nature of the operation, which, by diminishing, as far as can be done, the distance between the opening made in the bladder and the external aperture of the operation wound, brings the stone more within reach, and thus facilitates the ordinary manipulations for extraction. Of the extent of the facilities so obtained, those only can judge who are familiar with this operation, and have had opportunities of comparing it with the old lateral operation, which it has for many years past superseded in and around Glasgow—the only field on which hitherto the two operations have come into competition with each other. Still, however, with these facilities, there is usually more delay and more difficulty experienced in laying hold of and extracting the stone, than in making the incision necessary to get at it. It is therefore chiefly to this second stage, that any attempt to simplify and improve further the operation of lithotomy should at present be directed.

Influenced by these views I was led, last winter, to make trial of various methods of removing stones from the bladder; and I propose at present to bring under the notice of those who take an interest in such researches, and understand the capabilities of the new mode of operating, one or two of the methods which I tried, and thought most promising of good results:—

Extrusion with the Fingers.—The first method is, perhaps, more curious than useful. I found that after making the usual incision, according to the rectangular method, it was quite possible to remove certain stones with the fingers alone, without the aid of any instrument whatsoever. Stones of a spherical shape and smooth surface, like marbles, even though of large size, could readily be so removed; but to stones of a different shape, and of rougher surface, this method was found to be inapplicable, unless the opening in the bladder were of large size. The following remarks will render the mode of manipulating easily understood:—

The forefinger of the right hand, introduced into the bladder through the operation wound, readily reaches the stone, and has it so much under command that it can easily be brought down into the triangular space at the neck of the bladder, and placed there so that its longest diameter—if it be not spherical—may be parallel to a line at right angles to the middle of the incision of the bladder. This is the position most favorable for the extraction of the stone, and by the pressure of the forefinger it can be retained steadily in that position. Holding it therefore firmly, the fore and middle fingers of the left hand are introduced into the rectum, and passed up beyond the prostate, when, upon pressing them forward, the stone is distinctly felt by them; and it is so firmly grasped between these two fingers and the forefinger of the right hand as irresistibly to suggest to the mind the attempt to extrude it from the bladder, by means of the two fingers of the left hand pressing it from behind, while the forefinger of the right hand guides it outward, and regulates the direction of the pressure.

In this way, as stated above, smooth and spherical stones are readily removed, but only these, unless with a larger incision than usual. The process is therefore of such limited utility, that it would not have been worthy of the space the description occupies, had it not been that to bring the stone and fingers into the positions just described is often an important preliminary to other methods of extraction;—as to that next to be described, and to the ordinary method of extraction with the forceps—if it be the latter, instead of grasping through the bladder to find the stone, and attempting to seize it in whatever position it lies, the forceps is at once laid over the stone in a known position, and the stone is thrust between the blades by the fingers of the left hand, and laid hold of in the most advantageous direction; that is, with its long diameter parallel to the blades.

Landing-Net.—The great majority of stones cannot be extracted by the fingers alone, but require the aid of an instrument. Of various instruments for the purpose which I had constructed and tried, the one which seemed to me to answer best the ends for which it was devised, I named a *landing-net*, from its resembling very much, in its mode of operation, the tackling of the same name, with which the angler secures the fish he has hooked and brought to the water's edge. I had this instrument first made with a single handle, and an oval elastic rim of whalebone, to which the net was attached. But finding this not to answer well, I returned to a construction differing only from that of the common forceps, furnished with a net, in the modifications to which I subjected it. The handles are in no respect different, but the blades have altogether changed their character, as they are no longer intended to grasp the stone, but merely to open and shut the mouth of the sac which is attached to them. In conformity with this new destination, they are rounded and attenuated, so as to resemble stout stocking-wires. They are curved, so as to form together, when closed, an oval orifice to the sac; and they terminate in two rounded knobs, like peas, which prevent them from doing any injury when they are introduced into the bladder, or when opened and shut within it.

An instrument of this kind lays hold with great facility of stones of the size of those usually met with in the bladder. On placing the mouth of the instrument over the stone, and making downward pressure, the mouth tends to open spontaneously to admit the stone; and next, the hand holding the instrument, which had at first yielded to, and gently assisted the distending force, now closes the mouth, so as to include and secure the stone within the sac. In this way, without any further preliminaries, a stone may be laid hold of within the bladder, the metallic knobs detecting the place of the stone; and these knobs being carried to the farther side of it, the mouth of the sac lies over the stone, and, on downward pressure being made, will open to receive it. This method, however, is far inferior in precision and facility of execution to the following method, which I would recommend in preference:—

Place the stone and the fingers in the positions recommended for the process first described; that is, the stone lying immediately behind the opening in the bladder, with its long diameter at right angles to the direction of the opening; the index finger of the right hand introduced through the wound, and resting on the stone, and the fore and middle fingers of the left hand in the rectum, ready to press upon the stone from behind. Let the finger of the right hand be now withdrawn, and the instrument introduced in its place. The stone is now pressed by the fingers of the left hand against the two wires forming the mouth of the sac, and there separating, the stone is forced into the sac itself and secured by the shutting of its mouth. The two slender wires of the sac add little to the bulk of the stone, so that any difficulty experienced in extracting it can depend only on a disproportion between the size of the wound and the stone which is to pass through it; and if that cannot be overcome by address and moderate traction, it must be met by the enlargement of the wound.—*Glasgow Medical Journal*, July, 1858.

PRACTICAL MEDICINE.

1. AN ACCOUNT OF SOME CASES OF SCARLATINA ANGINOSA, SUCCESSFULLY TREATED BY HOT PACKING, INDUCING A COPIOUS AND PROLONGED DIAPHORESIS. By *Mr. F. A. Bulley, F.R.C.S.*, Senior Surgeon to the Royal Berkshire Hospital, Reading.—CASE I. Friday, April 30, 1858. I was requested to visit Jane A., a housemaid, aged twenty, who had been suffering for several days previously from fever; there was dry burning heat of the skin, intense and constant thirst, quick pulse, aching pains in the loins and limbs, with an anxious and somewhat confused appearance of the countenance, and all the other well-marked indications of considerable febrile disturbance.

These symptoms had been preceded by coldness of the surface and general chilliness of the body, with a scanty secretion of urine. On the Wednesday previous to my visit, she had begun to feel some uneasiness about the throat, and difficulty in swallowing, which increased so rapidly that, on the next day, Thursday, she found herself unable to swallow without great pain. There was considerable external swelling of the cervical glands; internally, the tonsils were much enlarged, acutely inflamed, and extensively ulcerated on their surface, the inflammation and ulceration extending, as well as I could see, into the pharynx. There was a constant discharge of mucus, somewhat fetid, from the nares.

To day, Friday, April 30, all the symptoms enumerated have increased in intensity; the skin is burning hot. Pulse 125; eyes suffused; great and constant headache.

Saturday, March 1.—The characteristic scarlet eruption has appeared over the neck and forepart of the chest and abdomen; but without any relief to the febrile symptoms, which continue unabated. To relieve the throat, she was ordered a gargle of vinegar and tincture of myrrh, hot vinegar and water fomentations externally, and to inhale the fumes of hot vinegar and water diffused about the room.

Sunday, 2d.—Throat somewhat easier, swallows a little better. The general febrile symptoms continuing unabated, and the eruption not appearing to display itself sufficiently in the extremities, she was ordered to be wrapped up in the hot packing, according to the method more particularly described in the next case.*

A copious diaphoresis having been shortly induced by these means, she was allowed to remain in it for five or six hours, when the wrappings were gradually and carefully removed. At the end of this time her pulse had fallen from 125 to below 100, her headache had almost disappeared, a gentle moisture bedewed the skin, and, after expressing herself as greatly relieved by the sweating, she fell into an easy undisturbed sleep, and slept for several hours.

The burning heat of the skin has altogether left her. She has little or no thirst; skin moist and perspiring.

She feels somewhat weak from the effects of the packing. To take strong beef-tea constantly during the day; she was ordered, for common drink, to take two teaspoonfuls of vinegar in a tumbler full of cold spring water, for the purpose of keeping up the diaphoresis, and an ordinary saline draught at intervals during the day.

The future progress of this case may be thus briefly stated. The inflammation and swelling of the throat gradually subsided under the use of a mixture of honey and water with tincture of myrrh inhaled from Dr. Harwood's inhaler; the sloughs subsequently became detached from the tonsils, exposing a superficially ulcerated surface underneath. The burning heat of the surface never returned, a gentle perspiration remained constantly upon the body; the pain in the loins left her after two or three days, and the secretion of urine returned: on the fifth day after the application of the hot packing, her appetite for solid food was returning, and on the sixth day, or about the tenth from the first accession of the febrile symptoms, it had completely returned, and she might in every respect be said to be quite convalescent from the disease. It may be as well to mention that no desquamation of the cuticle ensued on convalescence.

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* In this case, however, the patient's body was not immersed in tepid water: but thick pads of folded household flannel, wrung out of very hot water, were placed upon the chest and abdomen previous to the packing.

CASE. II. July 4, 1858.—I was requested to visit Ellen K., a very delicate-looking child, aged seven and a half years, who had been attacked with scarlatina.

The characteristic eruption had appeared the day before I saw her; it was more particularly observable over the trunk of the body, but very little displayed upon the extremities, except in a few isolated patches over the wrists and ankles.

It had been preceded by dry burning heat of the skin, which still continued, with constant and severe headache. Great thirst; pulse 130 in the minute; eyes suffused; occasionally severe paroxysms of coughing, and some difficulty in her breathing; great anxiety of countenance.

On examining the throat I found the tonsils very much enlarged, especially the left, and for the most part covered with a thick light-colored tenacious slough; the portions unoccupied by the slough were of a bright-red color, apparently in a state of intense inflammation. She had the greatest difficulty in swallowing anything at all solid. Externally the cervical glands were swelled, and extremely tender to the touch.

As I had frequently had occasion to observe the beneficial effects of a copious and sustained diaphoresis in the treatment of the various forms of scarlatina, she was immediately submitted to this mode of treatment, which was carried out in the following manner:—

Her body having been immersed in tepid water for about half a minute, at 75° Fahrenheit, she was laid, dripping, upon a coarse sheet previously a little warmed, which was then closely wrapped round her, more particularly about the neck, to confine the heat generated by the process.

This coarse sheet had been previously laid upon two blankets in the bed, and now these blankets were brought over in the same manner as the sheet, thus closely enveloping the body. Over these primary envelopes, other blankets to the number of eight or ten were laid until she could no longer bear the superincumbent weight. In about twenty minutes after the application, perspiration began to appear upon the face, and on examination shortly afterwards, it was found that the whole body was bathed in a copious diaphoresis, in which she was compelled to remain for about five hours, when the envelopes were carefully and gradually removed; the sheet which had formed the immediate envelope to the body was found to be completely saturated by the perspiration of the patient. When the patient had been entirely removed from the wrappings, and placed in a dry warm bed, she expressed herself as feeling much better, her pulse was diminished to 90 in the minute, her headache and thirst had become greatly relieved, and her body continued in a comfortable moisture throughout the remainder of the night.

On my visit next morning, I found that the same gentle perspiration had continued, her breathing had become much more easy, and she had scarcely any thirst; the eruption was rather more vivid than before the packing; her throat was still swelled externally, but certainly not so much so as before the application; internally, the inflammation was not so vivid, but the sloughs were still as adherent as before; for this she was ordered to take lemon-water ice in small quantities during the day, with, occasionally, small pieces of rough lake ice, which appeared to afford her great relief. For ordinary drink, she was ordered to take a weak mixture of brown vinegar and spring water, as a simple diaphoretic. To have strong beef-tea, cold, frequently during the day, and to take a saline draught, with small doses of the chlorate of potash, two or three times daily.

Flannel cloths steeped in hot vinegar and water, to be kept constantly applied to the outside of the neck and throat.

It would be tedious to follow the progress of this case to its successful termination; suffice it to say, that from the period of the discontinuance of the sudatory process which I have described, the little patient never experienced any return of the dry burning heat which had previously affected her; a gentle moisture constantly suffused her skin, her thirst gradually ceased, and her appetite for nourishing food returned; in the mean time, the external swelling of the throat subsided; internally, the sloughs became separated, and exposed a healthy surface underneath, the tonsils gradually assuming their natural healthy appearance.

On the fourth day she took a mutton chop, with a quarter of a pint of bitter ale, with a relish; on the sixth day she was well enough to sit up; and on the eighth day from the first accession of the symptoms, as she appeared to have in every respect completely recovered from her disease, with the exception of the debility to be expected after such a severe attack, she was removed into the country, where she has completely recovered her health and strength.

No desquamation of the cuticle had followed the disappearance of the scarlet rash.

CASE III.—I have not myself had an opportunity of testing the efficacy of this mode of treatment in the anasarca which sometimes follows scarlatina; but my friend, Mr. Winter Dryland, the resident-surgeon of the Reading Dispensary, who has recently had a considerable number of cases of scarlatina under his care, has given me the particulars of a case of this kind, in which its effects were so immediate and striking, that he thought it right to inform me of the facts, and has kindly permitted me to publish them.

A little child, aged six years, had apparently recovered from a somewhat severe attack of scarlatina, when, about a fortnight after its apparent convalescence, it was suddenly attacked with symptoms of anasarca of the limbs; great prostration soon followed; the secretion of urine became diminished; a difficulty of breathing ensued, indicating, at least, the commencement of effusion into the cavity of the thorax, the dyspnœa gradually but perceptibly increasing. In this emergency, Mr. Dryland thought he would resort to the treatment of hot packing, which was accordingly carried out in the manner described in the foregoing cases. By this means a copious diaphoresis was shortly induced, in which the little patient was kept for five or six hours, during which time, owing to its previous exhaustion, and the additional debility produced by the process, it was found necessary to supply it frequently with small quantities of warm brandy and water to prevent its sinking. At the end of this period, Mr. Dryland, who had carefully watched the patient throughout the whole of the process, observed that the great difficulty of breathing had partially disappeared, and, in some respects, the anasarca of the extremities; to use his own words, "there was an obvious diminution of the swelling of the extremities on the removal of the packings," and from this moment, under the judicious use of chalybeate remedies, the child gradually recovered from the attack, and was shortly afterwards quite convalescent.

Remarks.—It would be difficult to explain exactly the *ratio medendi* of the diaphoretic means employed in the foregoing cases. In the generality of instances, it would seem to act by subduing the inflammation of the skin which attends this disease, which, like the inflammation of all other secreting organs and tissues, prevents its performing properly, or even at all, its healthy secretory functions. This suspension or arrest of its natural functions causes a greater quantity of blood to be thrown upon other organs of secretion, especially the kidneys and tonsils, and the glandular apparatus of the intestines, which thus, in turn, become congested and inflamed, and after a time also lose their secretory power, ultimately becoming disorganized from the continuance of the congestion. Thus, in the end, in the worst case of this disease, all the excretory functions become suspended, and the patient dies, to all intents and purposes poisoned by his own blood.

It was to modify, and, if possible, to remove this primary inflammation of the skin, and to prevent its secondary operation on the other organs of the body, that I was induced to adopt the treatment I have described, with what success may be partially judged of by the details of the foregoing cases, selected from a large number of others treated in the same manner during the last fifteen years; and I have the satisfaction to remark that, during this period, I have never lost a single patient from this disease, however malignant the case might appear to be, which has been treated in this manner.

Something may also be due to the eliminatory powers of the prolonged sweating process employed, and from the manner in which I have found it act in other kinds of fever, in which I have extensively used it. I believe it possesses the faculty of eliminating whatever poison there may be in the disease from the system, at least to an equal degree in scarlatina. The rapid manner in which the febrile symptoms have subsided under its use, and the absence of their return in many cases, have led me to this conclusion, and I have no doubt that its good effects may partly be attributable to this power, combined with its more immediate action upon the skin, as I have described.

The medicinal treatment employed in these cases was almost of a negative character; ice, in small pieces, frequently swallowed, seemed to afford great relief to the throat. The beneficial effects of ice in these cases have long been known to the profession in assuaging tonsillary inflammation; but children of tender age frequently object to it in a rough state, and I have therefore generally substituted for it either lemon-water, or strawberry-ice, from the confectioners, which I have generally found the little patients take with pleasure, and even avidity.

A weak diluted solution of vinegar and water was administered as a common antiseptic drink, sweetened and rendered palatable by a small quantity of sugar. Vinegar taken in this way appears to act gently upon the skin, and keeps up a modified continuance of the diaphoresis produced by the packing. My friend, Mr. Baker Brown, has, I believe, lately published a pamphlet on the use of acetic acid in scarlatina, attributing some very remarkable effects to its medicinal use; but I have not yet had an opportunity of reading it, and, therefore, cannot say to what particular mode of action he refers its remedial superiority. I can only say, that I have used it for a long time dietetically in the manner I have mentioned, and have every reason to feel satisfied with its good effects.—*Medical Times and Gazette*, September 11, 1858.

2. Treatment and Clinical History of Asthma. By *Hyde Salter, M.D., F.R.S.*—In that mild but annoying form of asthma that accompanies the other symptoms of hay-fever, and is known as hay-asthma, tobacco pushed *ad nauseam* gives more relief than any other remedy. In a relative of mine who is very much afflicted with this troublesome complaint, tobacco-smoking is the only thing that gives any relief. During the hay season, and all the early hot summer weather, he suffers (besides the sneezing and running at the eyes, and tumid burning of the nose and throat, characteristic of hay-fever) from paroxysms of a wheezing dyspnœa of the true asthmatic type, coming on exclusively at night, so as almost to deprive him of sleep. During the rest of the year he never smokes, as it is disagreeable to him, and in other respects prejudicial; but during this season he is quite dependent on his cigar for any degree of comfort or alleviation of his symptoms. The following graphic account of the relief he finds from tobacco I cannot do better than give in his own words:—

"There is no remedy during a paroxysm of hay-asthma that has anything like the effect of smoking tobacco; and though this is especially the case in the latter stage of the attack, when the asthmatic element of the phenomena is most developed, still in the earlier stage, when the lachrymation, sneezing, and faucial irritation are most distressing, tobacco-smoke has, in my case, a very marked influence in soothing and diminishing these symptoms.

"No doubt any of those medicines which Dr. Pereira has called '*cardiaco-vascular depressants*,' would produce a somewhat similar result; but none is of so easy application, or can be used so readily or pleasantly as tobacco. During the hay-asthma season—*i. e.*, in my case, from about the 15th of May to the 10th or 12th of July, I regularly smoke a cigar the last thing before going to bed, or perhaps more frequently after I am in bed. The effect is, that (excepting during the last fortnight in June, when I never get a night's rest) the sedative influence of the tobacco prevents the occurrence of any asthmatic spasm. If, during this period, I omit my cigar, I seldom sleep beyond four o'clock; usually three o'clock finds me awake, hopelessly, though generally only slightly, asthmatic for the rest of the night; till, indeed, about nine o'clock, when almost always the asthma completely leaves me. This night-cigar is taken as a preventive. But tobacco will cure the asthmatic spasm when it is fairly on; only it requires a larger dose of the poison, and in a stronger form. The sedative influence of the cigar will usually insure me a fair night's rest; but the powerful depression of strong shag-tobacco is necessary to cut short the spasm when it is established. Even when I do smoke my night-cigar, I not unfrequently have to get up about three or four o'clock in the morning and smoke; and during the last fortnight in June, this happens almost nightly.

"Distressing as are the sensations of collapse from tobacco-poisoning, they are an unspeakable relief when contrasted with the impending suffocation of asthma. I shall never forget an attack which I once had, and the joy with which I hailed the approach of collapse from tobacco-poisoning. It was late in July, many years ago. I had gone into Dorsetshire to stay with a relative in a country house. Immediately surrounding the house were grazing-fields—not hay-fields—and they had not been mown. In this field was a grass—*Nardus stricta*, I think—still blooming luxuriantly; for it is a grass which cattle will not eat; and thus, though past the usual time for hay-asthma, I was accidentally surrounded by its most potent cause—grass in flower. The night came, and I had not been an hour in bed, when I was attacked with the most violent asthma I ever experienced. There were no cigars in the house; but one of the servants had some rank shag-tobacco. I smoked one pipe, then another; and as my face blanched, and my pulse failed, and the cold sweat stood on my forehead, miserable as were the sensations of collapse, they were Paradise to the agonies of suffocation. I shall never forget those moments of relief.

"The story of this attack of asthma, by-the-way, is a very instructive one; and I may just add it here, in brief:—I left my friend's house the day after this paroxysm, and went to the sea-side, where I was as usual perfectly well. Two days after, I received a letter from him asking me to return, as he had had the grass in flower about his house cut down. I did so, and remained with him a fortnight, sleeping every night as placidly as an infant. The *Nardus stricta* had given me the asthma: the scythe had cured it.

"To return to the tobacco. A hay-asthmatic should never smoke tobacco but for his malady. Smoking should never be to him a habit or a meal, for it then ceases to be a medicine. Indeed, to him it should be a deadly drug, for it is by poisoning that it cures."

Not long ago, I was conversing on the subject of his malady with a surgeon of some distinction in this city, who is grievously victimized with hay-asthma, and on asking him what he found do him any good, he replied, "Tobacco; tobacco is the only thing; nothing does me any good but smoking;" and he went on to tell me, that whenever he finds his asthma very bad, and that he shall get no sleep without it, he immediately resorts to a cigar. But the smoking does him no good unless it produces a condition of collapse; the mere sedative effect of it is of no use to him whatever; and having lost, from the habit of smoking, an easy susceptibility to tobacco influence, he adopts the following device to secure its more potent effect: he fills his mouth with tobacco-smoke, and then, instead of breathing it out again at once, as is usual in smoking, retains it in his mouth for several seconds, perhaps a quarter of a minute, then takes another mouthful, and so on. In this way, he finds that the tobacco is more rapidly absorbed by the mucous membrane of the oral cavity, and that a state of collapse is speedily induced. The moment the faintness and sickness comes over him, the asthma ceases, he turns into bed, and has a good night.

The effect of antimony nearly resembles that of tobacco, and it acts in the same way, but the nausea and collapse it produces are long and tedious.

Of the three drugs, I should say ipecacuanha is the most manageable, and entails the least suffering; tobacco the most speedy and effectual.

There are one or two practical points on which I would wish to add a few words.

Remedies of this kind, given with the view of cutting short the paroxysm, should be given as early as possible; and for two reasons: first, because it is much easier to break through the asthmatic condition when it is but just established, while the longer it is allowed to go on, the more inveterate and uncontrollable it becomes, and the more difficult it is to arrest it; indeed, its giving way at all may depend on the earliness with which the remedy is applied. I have known treatment powerless after the dyspnœa has continued for some hours, which never failed if administered as soon as it declared itself. Just at starting, in the earliest stages of the paroxysm, a very slight thing will determine its advance or retreat, and in proportion as it advances and deepens, in just such proportion do remedies become inoperative. The other reason is, that if the spasm *does* yield in spite of having been some time established, the recovery is not so complete as if the remedy had been applied immediately on its appearance. The longer the bronchial stricture lasts, the greater is the arrears of breathing, and the resulting pulmonary congestion; and if this goes on unchecked and increasing for many hours, the disturbance of the vascular balance becomes so great, the capillaries of the lungs so loaded, that it is a long time, many hours, or perhaps even days, before that balance is restored, and the vessels recover their normal condition; and although the bronchial spasm may completely give way, there remains a certain amount of shortness of breath and an incapacity for exertion, and it is not until an abundant expectoration of mucus has taken place, by the pouring out of which the loaded vessels have relieved themselves, that the chest becomes clear and the breathing free. In asthma at once cut short, there is no such accumulated congestion—no mucous exudation, and when the bronchial spasm ceases, all dyspnœa vanishes. If on first awaking with the sensation of asthma, the asthmatic nauseates himself with tobacco, or smokes his nitre-paper, or keeps himself in a standing posture, or in any other way cuts short the paroxysm, he will be throughout the succeeding day exactly the same, with the exception of the sleep he has lost, as if nothing had occurred; but if he suffers the fight between asthma and sleep to go on long, and then on the first remission of the dyspnœa lies back and goes to sleep, he will protract the asthmatic state, deepen the consequent pulmonary arrears, and not only postpone his recovery for many hours, but make it then slow and imperfect. I know an asthmatic who now never loses a day by his disease, in consequence of the promptitude with which he meets its first appearance in the early morning, but who formerly, from continuing to lie in bed, and try to get sleep after the asthma had begun, protracted his sufferings through the day. He is attacked as often as ever, and at the same time—about three or four o'clock in the morning, but the moment he finds his asthma on him, he takes measures to keep himself wide awake—stands leaning against a piece of furniture, and, if necessary, induces tobacco collapse, so that instead of a day's asthma he has half an hour's, and, as far as all the engagements of life go, has ceased to be an asthmatic.

It is a difficult thing for the asthmatic, I know, overwhelmed with sleep as he is, and generally with a peculiarly heavy drowsiness upon him, to leave his bed, or light and smoke his pipe; but he *must* do it; he must rouse himself fairly up, and adopt at once those remedies that in his particular case are most efficacious. In fact, the treatment of the asthmatic paroxysm should be so prompt as to be almost rather preventive than curative: in the treatment of no disease is the injunction "*obsta principiis*" of more vital importance.

One is sometimes asked—Which is the best form of tobacco to use, a cigar or a pipe? I think a pipe has the advantage of more certain strength; cigars vary so much, even the same sort. The tobacco that I generally employ is bird's-eye, as being a mild tobacco, and one by which you run little risk of inducing alarming collapse. *Shag*, or any other of the strong tobaccoes, should not be used by the uninitiated, as the collapse they produce is apt to become protracted and unmanageable. For ladies and young children, a few whiffs of a mild cigarette are quite sufficient.

Of ipecacuanha, I think the powder is better than the wine. I never give a very small dose, it is uncertain and teasing. I would say, always give such a dose as will be certain to secure its own prompt rejection. I never give less than twenty grains, however young the patient may be: it never does harm.

But ipecacuanha is a nauseous thing; and especially to those who have frequently taken it as an emetic, it becomes almost intolerable. I have lately discovered that it may be taken very pleasantly and very efficaciously in the form of some strong ipecacuanha lozenges made by Messrs. Corbyn, of 300 Holborn. They are about four times the strength of ordinary ipecacuanha lozenges; three of them will produce prompt vomiting. They are very convenient, too, for keeping up a slight nausea; and for children they are invaluable. If vomiting is desired, they should be bitten and ground up in the mouth, and swallowed at once.

There is one circumstance that greatly detracts from the utility of tobacco in the treatment of asthma; that practically, indeed, almost destroys it. Our adult male population have so habituated themselves to its use, that they have lost the susceptibility to its full influence, and cannot induce complete collapse by any amount of smoking. Now adult males constitute by far the majority of the subjects of spasmodic asthma; and thus the habit of smoking has rendered powerless, in a large number of cases, what I think may, without any qualification, be called its most potent remedy.

To the practical I need not apologize for these trifling hints, of which I know they will recognize the value.—*London Lancet*, September 18, 1858.

OBSTETRIC MEDICINE.

1. A NEW SYMPTOM OF RUPTURE OF THE UTERUS.—Dr. M'Clintock related some cases of rupture of the uterus and of the vagina, to illustrate the obscurity which may occasionally surround the diagnosis of this accident when occurring during parturition. He particularly drew attention to a symptom observed in one of the cases, which he considered might hereafter be found of value as a diagnostic of laceration of the uterus or vagina. This symptom was *an emphysematous state of the integuments covering the hypogastrium.* Its existence was detected by the stethoscope while searching for the fœtal heart. Examined for in this manner, the crepitation was loud and distinct, but to the hand it was not so obvious, except when firm pressure was made in the proper situation, then the crepitus was evident, and was recognized by Dr. G. Montgomery, and by several pupils who happened to be present at the case. The other symptoms present

were of so ambiguous a kind, that the possibility of rupture having taken place seemed doubtful. There was no prostration, no recession of the presenting part, and no cessation of the pains: the woman was able to be up and to walk about. Having ascertained that the emphysema had not extended downward from the chest or neck, and that it was confined to the suprapubic and iliac regions, Dr. M'Clintock inferred that the air had obtained an entrance through some rent in the genital passages. Acting upon this conclusion, the woman was delivered by craniotomy, (the fœtal heart had not been heard for two hours previously.) She sank rapidly after delivery, and died in a few hours. The left broad ligament was found emphysematous, and a tear existed in the left side of the uterus at the junction of the body and cervix. At some distance from this the peritoneum was found rent also, and a considerable quantity of blood had been effused into the abdominal cavity.—*Dublin Quarterly Journal; Edinburgh Medical Journal*, February, 1858.

2. PUERPERAL CONVULSIONS. By *Dr. Pirrie.* (Read before the Belfast Medical Society.)—I have long been dissatisfied with the *routine practice*, and its results, in cases of puerperal convulsions. By routine practice I need scarcely say that I refer to bleeding, which in its various forms has been recommended most urgently by almost all of even our modern authorities in obstetrics.

Thus, we everywhere meet with expressions such as the following: "Bleeding is our great reliance." "The lancet is our sheet-anchor; and blood may be taken to a very large extent." (Ramsbotham.) "If there be a case in which the bold and daring use of the lancet is demanded, it is the case of puerperal convulsions." (Meigs.) "The first thing to be done is to take away blood from the arm or temporal artery largely and in a full stream." (Churchill.) "In the first rank both as prophylactic and curative are to be placed sanguine emissions." (Cazeaux.) But that such was the universal practice, I need cite no authority, as I believe all of us have been in the habit of thus treating our cases of puerperal convulsions, as I was myself till some time ago, when I happened to have a case of convulsions occurring during the progress of Bright's disease of the kidney in a male, and a case of puerperal convulsions in a pregnant female before labor, under my care about the same time. I was then most forcibly struck with the similarity of the signs and symptoms in the two cases: in both there was œdema of the face and upper extremities, accompanied by albuminuria, and the paroxysms of convulsion in both were absolutely identical. I treated them both on the same principles, of which bleeding formed no part, as being virtually different stages of the same disease, and had the satisfaction of seeing the case of puerperal convulsions recovering without a trace of remaining disease; and the case of Bright's disease, although looked upon at one time as actually moribund, so far recovered as to be able to leave the hospital in decidedly an improved state.

In the book just published by Herr Braun, Professor of the Imperial Midwifery Clinique at Vienna, (the chapter of which on convulsions has been translated by Dr. Duncan of Edinburgh,) he formally protests against the practice of bleeding in cases of puerperal convulsions, and says that "general depletion of blood has very seldom any valuable effect on the symptoms, and generally produces irreparable injury." The same author also affirms that *every* case of *true* puerperal convulsion, or eclampsia vera puerperarum, is dependent on *uræmia*, that is, on the blood being contaminated by urea, and perhaps also by other excrementitious products which should have been excreted by the kidneys, had they been properly discharging their function.

This important fact in pathology, like almost all other discoveries in medicine, appears to have been arrived at by degrees. Thus, as early as the time of Hamilton it was observed that women who during pregnancy had œdema of the face or upper extremities, were very liable to have convulsions at the time of labor. Following this up, Simpson of Edinburgh, in 1843, found that these cases were associated with the presence of albumen in the urine; and in 1848 he demonstrated the presence of disease of the kidney at the post-mortem of a case of puerperal convulsions; and he also observed the presence of albumen in the urine of a child affected with convulsions, born of a mother similarly affected. But I believe it has been reserved for Professor Braun first publicly to declare that every case of *true eclampsia* arises from uræmia, and thereupon to modify the treatment of the disease.

As the term eclampsia is generally applied to an acute affection of the motor function of the nervous system, characterized by tonic and clonic spasms, and insensibility, and as several different pathological states produce these phenomena, and yet have nothing further in common, and have not the same influence upon the life of the mother or offspring,—it becomes of the utmost importance to make a true and particular diagnosis of these different forms of convulsions.

Agreeing with Professor Braun, I would restrict the term true puerperal convulsions (which may occur during pregnancy any time after five months, during parturition or childbed, or even later) to those cases dependent on *uræmia*. The term uræmia is still retained, although it is admitted that the convulsions do not originate, as was formerly supposed, from the blood being poisoned by urea, as filtered urine has been injected into the veins of animals without producing convulsions.

After a series of carefully performed experiments, Frerichs was led to the conclusion that the phenomena of uræmic intoxication are not produced by urea or any other ingredient of the urine, but that they commonly arise from this circumstance, that the urea, accumulated in the blood, is transformed into carbonate of ammonia, under the influence of some peculiar ferment. For the production of uræmic phenomena, it is therefore necessary to have in the blood urea in quantity, and also some ferment, by means of which the urea may be changed into carbonate of ammonia. If the ferment be wanting, then the blood may for a long time be impregnated with urea without any convulsions appearing; in this way is accounted for the fact that in the bodies of persons dead of Bright's disease, the blood may be found saturated with urea, without any uræmic phenomena having been observed during life. Simpson has most ingeniously suggested that it may be to this principle of action that the beneficial effects of chloroform inhalations are due in uræmic convulsions, as chloroform produces a temporary diabetes mellitus, and it has been demonstrated that sugar in minute quantities, added to the urine, prevents for a time the natural decomposition of urea into carbonate of ammonia.

Among other convulsive affections which may occur during pregnancy or labor, I would include hysteric, epileptic, and apoplectic convulsions, and convulsions arising from other impurities (bile, carbonic acid) retained in the blood, or from poisons admitted into the circulation, (as lead, mercury, arsenic,) and anæmia. The possibility of any of these forms of convulsions (differing essentially in their prognosis and treatment) occurring during labor, amply shows that too much importance cannot be attached to the *differential diagnosis* in all cases of puerperal convulsions.

The true pathology of eclampsia (till 1848, when Simpson first showed the coexistence of granular degeneration of the kidneys) was unknown; the usual remark being, that post-mortem examination afforded but little information, there generally being no deviation whatever from the healthy state of the brain. But since attention has been directed to the renal origin of puerperal eclampsia, I believe that in almost every fatal case that has been minutely examined, one or other of the three stages of Bright's disease has been constantly found, corresponding to the description given by Dr. Bright, and recently and more minutely by Frerichs, and by Dr. Johnson in his valuable work on Diseases of the Kidney.

It is not necessary that I should take up time describing these pathological changes, which must be familiar to all, from the many specimens of diseased kidney exhibited in connection with Bright's disease. I would rather direct attention to the signs of the existence of this disease during life: I mean those changes observed in the urine and the œdematous condition of the face and upper extremities, which, as I have already remarked, has long been observed as a precursor of convulsions; but dropsical swelling is not necessarily connected with albuminuria, just as, on the other hand, there occurs during pregnancy a dropsy in which the urine is found quite normal.

Hyperæmia of one or both kidneys, caused by congestion of venous blood, is the primary stage of acute Bright's disease. This is soon followed by fibrinous exudation into the Malpighian corpuscles, the albumen only of this exudation at first passing off with the urine, while the fibrinous matter, coagulating in the tubuli of the cortical substance, and remaining in them for a longer or shorter period, is at length propelled from them, along with the exfoliated epithelium, in the form of cylindrical casts of the tubes. Hence we have, during life, first the urine charged with albumen, which may be discovered with the usual tests; and afterwards, the casts of the tubes, which can only be discovered by microscopic examination.

In testing for albumen we should be careful to use moderately diluted nitric acid, and not the strong fuming acid, as the latter decomposes and redissolves the albumen. And we should also bear in mind that it is only in urine having an *acid* reaction that albumen is precipitated in quantity by boiling; for in alkaline urine the *ammonia*, which is always present, retains the albumen in solution. I have known the presence of albumen to have escaped observation from the neglect of these simple precautions.

Different explanations have been given as to the cause of the renal hyperæmia, the most plausible ascribing it to congestion produced by pressure of the gravid uterus on one or both renal veins. Of cases of eclampsia, above 80 per cent. (96 per cent., Collins,) occurred in *primiparæ*, in whom, on account of the greater resistance of the abdominal walls, a more powerful counter-pressure is produced on the kidneys. Eclampsia, too, is frequently met with where there is increased pressure from plural pregnancy, dropsy of the amnion, deformed pelvis, or excessive obliquity of the uterus. Something also is, no doubt, due to the altered state of the blood during pregnancy.

Treatment.—Should albuminuria be diagnosed during pregnancy, something may be done by way of *prophylaxis*, by the administration of such medicines as will prevent the decomposition of the urea, or rather will neutralize the carbonate of ammonia. According to Frerichs, benzoic acid is the most efficient remedy, and the free use of drinks acidulated with lemon-juice or tartaric acid. If the secretion of urine be very scanty, the occasional use of purgatives will be useful as preventing local congestion. But as long as pregnancy continues, we can only expect the mitigation of the albuminuria, not its cure, the cause still being present ; and should symptoms arise indicating immediate danger to life, or producing serious functional derangement of the heart, brain, or lungs, the propriety of inducing artificial premature labor should then be seriously entertained.

When convulsions have actually occurred, we have to consider the medical and obstetrical treatment.

The medical treatment will be the same whether the convulsions occur during pregnancy, labor, or childbed,—the first object being to diminish as much as possible the reflex excitability of the nervous system, and to weaken the paroxysms so as to gain time. As the best means of obtaining these results, all who have used chloroform inhalation speak of it in the highest terms, its success surpassing all expectations. It should be administered immediately upon indications of an impending paroxysm presenting themselves. The inhalation should be kept up till the premonitory symptoms of the paroxysm disappear—which is generally in the course of a minute or so—but, should it not be possible to cut short the paroxysm, the chloroform inhalations should be suspended during the paroxysm and supervening coma, for obvious reasons.

The beneficial effects of chloroform may be ascribed to its sedative effect on the nervous system, or to its peculiar action on the blood, as suggested by Simpson, in arresting the further decomposition of the urea.

In the interval of the paroxysms the direct medical treatment of the uræmia should be proceeded with by administering five to ten-grain doses of benzoic acid, and cold acidulated drinks. If the bowels have been constipated, and the paroxysms severe, a bolus with five to ten grains of calomel, with a drop or two of croton oil, followed by turpentine injections, will generally be found useful. To moderate the secondary congestions of the head, which come on after the paroxysms, the local application of ice or the cold douche will be found to have a more powerful and lasting influence than the use of leeches.

Sponging the skin with tepid vinegar is stated to be very useful in producing diaphoresis. As a rule, general depletion should be avoided, as it very seldom produces any valuable effect on the symptoms, and generally produces irreparable injury. If, however, a cautious selection of single cases be made, one moderate bleeding in strong, full-blooded women may not only not be injurious, but may much facilitate the action of other remedies.

Revulsive measures, as sinapisms to the calves of the legs and soles of the feet, and blisters to the nape of the neck, are generally recommended, but I do not think that any very marked benefit can be expected from them.

But whatever benefit may be derived from any of these measures, we must still hold the prompt and careful evacuation of the uterus to be a most essential and important point in the treatment of puerperal convulsions. How this is to be accomplished will, of course, depend upon whether uterine action has commenced or not, or upon the stage which the labor has reached. Should the paroxysms continue after the evacuation of the uterus, and the administration of benzoic acid and cold acidulated drinks, opium given in doses of one to three grains, or one-eighth to one-half grain doses of morphia, with opiate injections, generally acts most beneficially.—*Dublin Quarterly Journal of Medical Science*, February, 1858.

3. STATISTICS OF OPERATIVE MIDWIFERY.—This is a report by the great Leipsic veteran, *Dr. Meissner*, on the results of his thirty-five years' midwifery practice, as far as operative midwifery is concerned. He observes, that a review of private midwifery practice must be taken from quite a different point of view to that of a public institution; for while in the latter the bulk of the cases are examples of natural labor, the private practitioner is only consulted, as a general rule, when the case has become pathological. [These observations are, of course, only applicable to the mischievous continental practice of leaving cases in private practice to the almost exclusive care of midwives, the physician only being called in when the case has assumed a serious aspect, and, of course, frequently too late.] Moreover, in the Lying-in Hospital, the physician treats his cases in a suitable locality, with all he wants at hand; while in private, the practitioner is called miles away to neglected cases, having insufficient appliances, and is forced to treat his cases under the most disadvantageous circumstances.

Dr. Meissner's observations relate to 3811 women, who, he says, gave birth to 3980 children, as 136 were twin, and 2 triplet births. But there is here obviously some error in the numbers, as these do not correspond with each other. Of the 136 twin-births, in 54 there were 2 boys, in 35, 2 girls, and in 47, children of both sexes. Of the triplets, in one case there were 2 boys and 1 girl, and in the other, 3 girls. These 3811 labors called for operative interference in 3025 instances, dynamic aid being required in 924 of these to effect change of position. There were 1863 forceps operations (!), this instrument being required in 5 other instances for the removal of separated fungoid or polypous tumors. Turning was performed 351 times, extraction 247 times, perforation 32 times, the induction of premature labor 20 times, the Cæsarean operation 6 times, *accouchement forcé* 55 times, polypus operations 6 times, placenta separation or deliveries 447 times; 2086 boys and 1684 girls were born at full time, while there were 265 premature births or abortions, and 24 moles and polypi; 399 children were born dead, and of those living, 36 died within fourteen days. Twenty-five mothers died either before or during labor, or within sixteen days after it.

Turning.—Although this, when performed at the proper time, is usually an easy operation, executed within a few minutes, yet of the author's 351 cases, in only 222 did it prove completely successful for both mother and child. In 104 cases the child was born dead, in 2 cases the mother died from the delivery, and in 2, after this had taken place. This issue is chiefly to be attributed to the ignorance of midwives in the detection of cross presentations, and the delay that elapsed before aid was obtained. Dr. Meissner prefers turning by one foot, unless there is some indication for hastening the delivery. This rule is of especial importance when multiple births are expected, so as to avoid getting hold of two feet of separate children. In one of the author's cases of triplets all the children presented cross-wise, and six lower extremities were felt. All the children were safely delivered by operating upon one foot at a time. The one-foot delivery also gives the child the best chance of being born alive. *Cephalic* version is preferred by some practitioners, as giving the child the best chance; but it can only be tried when hastening the delivery is not an object. The author resorted to it successfully in 6 cases. In 4 of the 351 cases turning was performed by *external manipulation*, and in 3 by *spontaneous* version, the buttocks being forced by the presenting shoulder into the pelvis, and all the children being born dead.

Forceps Operations.—Of 1863 cases, in 1750 the head was the presenting part; and in 113 the forceps were used for its delivery in other presentations. Of the 1754 children delivered, 99 were born dead, *i.e.* nearly 12·19. This, in an operation which, carefully performed, can hardly be considered dangerous to life, is a high proportion; but the child had, in fact, not unfrequently died during pregnancy, and was in advanced putrefaction on delivery. In 10 instances the child was hydrocephalic or dropsical; in 3 the mother was already dead; there were 5 cases of spina bifida; 7 deaths took place from prolapsed funis, and 3 from the arm and head being tightly wedged in together. In 4 instances the mother had suffered from repeated convulsive paroxysms. In other cases the application of the forceps had been repeatedly attempted by preceding practitioners, or the passage was narrowed by the presence of tumors. Dr. Meissner remarks, by-the-way, that the separation of the epidermis is not always a certain sign of the death and putrefaction of the child, as it may be produced by an acrid condition of the *liq. amnii.*

Extraction.—This was performed in 247 cases, and became necessary when, in breech knee, or foot presentation, the child's life was threatened by cessation of pain, faulty position, or prolapsus of funis. Only 145 of the children were born living; but then, 13 had died through pressure on the funis, before the author's arrival; 18 were in a state of putrefaction, 10 were already born except the head, 8 were immature, and in 5 others there was hydrocephalus, or other form of dropsy. In 42 instances extraction had to be performed on account of cessation of pain after turning.

Perforation.—In his thirty-six years' practice, this operation has only been performed by the author thirty-two times, and he had attended 3299 labors before he had his first case. He has always followed the maxim laid down by the chief German practitioners, of never proceeding to the operation until assured of the child's death; and it has several times happened to him to see living children born in cases which have been left for days together to the powers of nature, and which in previous labors had been delivered by perforation.

Premature Labor.—So much has the performance of the operation for premature labor limited that of perforation, that while to the year 1842 he had had to resort to perforation in twenty-eight instances, he has during the subsequent fourteen years only performed it four times. He has never induced premature labor prior to the thirty-sixth week, and has never found this too late, the bones continuing thus long sufficiently soft and yielding to accommodate themselves to the narrowed pelvis. When the reckoning is uncertain, he performs the operation thirty-six weeks after the last menstrual period.

Forced Delivery (*Accouchement Forcé*).—By this term the author understands the whole series of operations (as artificial dilatation of the os uteri, bursting the membranes, turning, extraction, or removal of placenta,) which may be required for delivery when the further continuance of pregnancy is dangerous to mother and child. It is especially called for in certain cases of eclampsia, placenta prævia, and obstinate vomiting. He enumerates under this head two instances of opening the adherent os uteri by means of the knife, and eight cases of its forcible dilatation. This last procedure was resorted to because, after the labor had continued three or four days, in place of dilatation of the os uteri, general debility and delirium set in. The author has resorted to it fifty-five times during thirty-six years. In thirty-three of these cases both mother and children did well, although, as the dilatation was usually undertaken for placenta prævia, most of the latter were born some weeks too soon. As the majority of cases (31) were examples of placenta prævia, in which hemorrhage had continued long before the patients were seen by the author, it is not surprising that ten of the mothers died; but another statement of the author, that even when he arrived at his patients he plugged the vagina, and awaited pains before proceeding to deliver, is somewhat extraordinary.

Cæsarean Operation.—Of the six examples of this that have fallen to the author's lot, five were peformed on mothers being already dead, the children being saved in none. In the case of operation upon the living subject, both mother and child lived.

Placenta Removals.—The number of these (447) must seem very large; but it is to be remarked that perhaps not one-tenth of these cases were examples of abnormal adhesion requiring separation, the placenta being frequently detained from other causes, preventing the success of the ordinary manipulations, as "stricture of the uterus," spasmodic contraction of the uterus from too early interference. etc.

General Results.—Of the mothers, 41 were lost; 25 during, and 16 after delivery. Of the former 25, 11 were already lifeless when seen; and of the 14 others, 1 died from rupture of the omentum with internal hemorrhage, 10 from placenta prævia necessitating forced delivery, 2 from nervous shock after favorable labor, and 1 from hemorrhage. Of the 16 mothers who died after delivery, 1 died from cancer of the stomach, 1 from pneumonia, 3 after repeated attacks of eclampsia, 1 from putrescence of the uterus, 1 from typhus following the birth of a putrid, premature child, 4 from puerperal fever following operative procedures, 1 from "paralysis of the lungs," 3 from the consequences of loss of blood, and 1 after several hours' operative attempts by a country practitioner.

Of the *children* 399 were born dead, as already stated, under the various operations. Besides these, 36 died within the first fourteen days after birth; viz., 4 from debility from too early birth, 6 from atelectasis pulmonum, 2 from trismus, 1 from fissure of the cranium after a forceps operation, 1 from chronic hydrocephalus, and 2 from want of breast-milk.

After remarking upon the remarkable sequences met with in practice of unusual pathological occurrences, and of the operations required for their relief, the author observes, that, as a general rule, forceps operations are found to be most frequent in cold, changeable weather, which induces rheumatic affections of the uterus, not only rendering the dilatation of the os very painful, but delaying its accomplishment for days. This condition may be often prevented by clothing warmly the lower part of the person; and when it is present it should be treated by Dover's powder. The standing too much over the fire, also, may, by over-heating the abdomen, lead to a plethoric condition of the anterior wall of the uterus, which may not be without its influence in inducing morbid adhesion of the placenta. Such an occurrence is best prevented by abstaining from this practice, and bathing the abdomen with cold water. When adhesion has taken place repeatedly at the same place, in consequence of an indurated condition of a portion of the uterine wall, we should, after the termination of the puerperal condition, endeavor to induce absorption by mild mercurial or iodine frictions, tepid baths, together with hemlock and mallow injections. If these do not succeed, the baths at Krankenheil, near Tolz, in Bavaria, which have been found so useful in fibroid and hypertrophy of the uterus, should be tried. —*Monatschrift für Geburts-Künde*, band ix., pp. 19–72.—[*Med. Times and Gazette*, May 29, 1858.]

4. INFLUENCE OF PREGNANCY AND DELIVERY UPON INSANITY. By *M. Marcé.* —M. Marcé thus concludes an interesting paper illustrated by cases. 1. We cannot protest too strongly against the practice of those physicians who advise or allow pregnancy in insane women, for it results from the facts mentioned in this paper that, in the great majority of cases, pregnancy and delivery, so far from exerting a favorable influence on insanity, seem, on the contrary, to hasten on the progress of the disease toward dementia. If in certain exceptionable cases (2 in 16) pregnancy has suspended the progress of the disease, the improvement has been only temporary, and the insanity has reappeared after delivery. 2. In some few cases (4 in 16) remarkable especially for the predominance of erotic symptoms, pregnancy has exerted a beneficial influence on the cure. 3. When insanity becomes developed during pregnancy, it very often remains incurable, even after delivery, or is cured so long after that no influence can be attributed to the latter in the termination of the nervous affection. 4. Sometimes, however, (3 in 10 cases,) the disease disappears after delivery, and these cases must be regarded as sympathetic. 5. Delivery in the insane is often remarkable for the slight amount, or even complete absence, of pain.—*Annales Medico-Psychol.*, tome iii., p. 359.—[*Med. Times and Gazette*, April 10, 1858.]

Editors' Table.

ALLOPATHY—ALLOPATHISTS.—What is there in a name? Much, very much, if with some philosophers we believe that names are things. In no case can a name, intended to indicate a quality or property of matter, or of a particular creed in science, ethics, religion or politics, be regarded with indifference. A term introduced to cover a proposition in any of these departments, must, if it falls short of the intention, mislead, and by conveying wrong ideas of the question involved, it serves to propagate and extend errors, both on the part of those who support and those who oppose its tendency and results. Sometimes a word is used which answers the purpose of showing what thing it is we are talking about, but not of telling the nature or qualities of the thing itself. Methodist, for example, is now well understood to designate a member of a sect of Christians; but the word conveys no idea either of the disciplines or of the doctrines of that sect; and in these matters it would be just as applicable to Episcopalians or to Roman Catholics, as to the followers of John Wesley. This very negative character of the word, like the name of an individual, has its recommendation in its not conveying imperfect or erroneous notions on the great cardinal points of doctrine. Sometimes a name is given to a body of men, with an avowed purpose of ridicule or reproach, and, as such, it may be mischievous to the parties thus named; but if they are successful in carrying out their plans, they themselves may adopt the obnoxious term, and by giving it vogue, deprive it of its sting. Such was the case with the *Sans-culottes* of the French revolution, who, although guilty of enormous excesses, and figuring as robbers and cut-throats in Paris, showed themselves to be brave soldiers and patriotic citizens, when sent to the frontiers to repel the invasion of France by the Prussians and Austrians. The title of "beggars," applied, in ridicule, by one of the members of the council of regency governing in the name of Philip II. of Spain, to the confederate nobles of Holland and the Low Countries, who had petitioned for a redress of grievances, was promptly adopted by them to designate their league; and a wallet, such as that worn by pilgrims and beggars, was emblazoned on their banners as the emblem of their party. All this misled nobody: it neither indicated a political creed, nor gave promise of the intentions of the party adopting the title and the emblem.

Among the "Fallacies of Confusion" laid down by logicians, stands at the head "that multitudinous body of fallacious reasonings in which the source of error is the ambiguity of terms; when something which is true, if a word be used in a particular sense, is reasoned upon as if it were true in another sense." Allopathy is one of those ambiguous terms, on the abuse of which we propose to offer some strictures. It is sufficiently distinctive, when it is used to designate a system of therapeutics, or a method of medical practice in direct contrast with and opposition to homœopathy; but it is misleading and false when it is intended to indicate the therapeutical doctrine and practice of regular physicians. We can conceive that there might be such persons as allopathists, but we have never known of men who were exclusively so as practitioners of medicine. The absurdity of homœopathy as an extreme and exclusive doctrine, which in theory takes but a partial and necessarily imperfect view of the premises, and which, in practice, carries out its consequences in a lame and contradictory manner, cannot be rectified by the adoption of allopathy as its opposite, and which would consist in another extreme and exclusive creed. Neither the dogma of the former *similia similibus*, nor that of the latter *contraria contrariis*, can furnish safe indications for the employment of the various curative means with which experience has made us acquainted.

A quaker would think it very illogical, if, because he objected to wearing black, he were to be told that he was, therefore, pledged to robe himself all in white. A hater of monarchical despotism is not, on this account, pledged in support of democracy; nor is he who abhors assassination to be classed among the supporters of tyranny.

As to the theory of homœopathy—like removed by like—the replacing of a series of symptoms indicative of disease by another series of symptoms of an analogous character induced by remedies, it is carried out by the regular practitioner in many cases: but he does so by the administration of medicines which are appreciable by weight and measure, and which produce, in their immediate operation, sensible effects; in this respect, differing essentially from the exclusive homœopathist, who gives infinitesimal doses, the minuteness of which goes beyond the power of imagination. There are cases in which we sometimes prescribe like against like, as when we remove the pain of pleurisy by inducing the pain from a blister, and stop diarrhœa by a purgative, and vomiting by an emetic; while, on the other hand, we prescribe, allopathically, for other stages of these diseases, venesection and sedatives in pleurisy, and astringents and opiates in diarrhœa. Mere allopathy, as meant to embody a system of the practice of medicine, is not less absurd than mere homœopathy. Fortunately for the sake of common sense and logic, and the health of the people, only one of these absurdities, the latter, has taken possession of many minds, as the fundamental doctrine of their medical creed. It would doubtless suit well the views of the homœopathists to see the regular members of the profession take up a directly antagonistic, though necessarily a false position as exclusively allopathists, so that the public, only seeing two theories, or rather dogmas, is left to choose at random between them; with, however, a natural leaning in favor of the one which promises a cure by the easiest and most pleasant means.

In the name of the regular profession of medicine and of medical philosophy, and bearing in mind the experience of the past and observation of the present, we protest against receiving from an inimical, a prejudiced, and an incompetent party, a title which professes, but fails by its ambiguity, to designate our medical creed, and to shape our practice under it. We can no more admit the right of homœopathists to assign us the false position of allopathists, than we can that of the vegetarians from whom we may differ, to assume that we belong exclusively to the *carnivoræ*.

We would entreat our professional brethren, everywhere, if they value sound medical philosophy and entire freedom of therapeutical selection, to resist on all occasions this insidious attempt of their enemies, and never to allow themselves to be misnamed or nicknamed allopathists.

CRANIOGRAPHY appears to be slowly but surely asserting its claims to be received and acknowledged as a science of some importance. Founded to a great extent upon the well-known works of Blumenbach and Morton, it has, within the past few years, advanced considerably, and assumed a more comprehensive and positive character in consequence of the great additions made to it by the publication of the magnificent Atlas of Dumoutier, the Crania Britannica of Davis and Thurnam, the Deformations du Crâne of Gosse, and the important monographs of Huschke, Virchow, and others in Europe. On this side of the Atlantic, besides the more elaborate works of Morton, various craniographic articles have been published at different times by Mr. J. S. Phillips, Prof. D. Wilson, of Canada, Drs. C. D. Meigs, Neill, Nott, Ramsay, Johnson, and J. Aitken Meigs. The last-named gentleman again directs the attention of the scientific public to this interesting subject, in a small pamphlet, entitled "Hints to Craniographers upon the Importance and Feasibility of Establishing some Uniform System by which the Collection and Promulgation of Craniological Statistics, and the Exchange of Duplicate Crania may be Promoted." In this article, which was read before the Academy of Natural Sciences of this city, at one of its recent meetings, and has since been published in the *Proceedings* of that Society, Dr. M. alludes to the slow progress of craniology, and attributes it chiefly to the want of combination, or some regularly systemized effort among the cultivators of this science. He also speaks of the utility of making cranial collections, enumerates many that have been established, and urges upon their proprietors the importance of printing catalogues of the same, and distributing them to all who may be interested in this branch of the natural history of man. Finally, he says :—

> "To the student of craniology, catalogues of all cranial collections, whether large or small—especially if they be descriptive—are of very considerable value. They make known to him the existence of other collections besides his own, and inform him what races and tribes of men are represented therein, or in other words, precisely how much and what available material has been collected for the furtherance of his scientific specialty. He may be desirous of studying the cranial characters of a particular race, of which the specimens in the only collection to which he has access are few in number or of doubtful origin. Having exact catalogues of the various cranial collections which have been made, from time to time, and deposited in different parts of the world, he turns to these and at once learns how many specimens of this race, besides his own, have been collected, and where they are located. He at once opens a correspondence with the proprietors of these collections, and is soon put in possession of any information which he may desire.
>
> "Moreover, these catalogues would form an admirable basis for the interchange of duplicate crania, for the owners of them would know exactly where to apply to make up their deficiencies. The correspondence, also, to which the interchange of catalogues and duplicate crania would give rise, would of itself greatly facilitate the progress of craniography, by making the students of this science acquainted with each other, and enabling them, by a private interchange of opinions, to verify their conclusions or examine them in different points of view before publication. There can hardly be a

doubt that the different collections would be respectively increased by the extensive distribution of such catalogues in the hands of army, navy, and other government officials, officers of merchantmen, travelers, naturalists connected with exploring expeditions, and others whose opportunities might be favorable to making such collections, and who would cheerfully do so, were their attention once explicitly directed to this matter.

"Again, the progress of craniography might be very much and very readily facilitated by some such plan or system of co-operation as the following: Let all those actually engaged or interested in the study, in any particular country, notify the secretary, or appropriate officer, of the most prominent and best known scientific institution in that country, of the existence and precise location of any collection of crania with which they may be acquainted, no matter how small or imperfect such a collection may be, stating carefully the name and address of the Society or individual owning the collection, the number of skulls contained, and the different races of men represented therein. Let the secretary or other officer receiving such communications cause them to be published from time to time in the printed journal, transactions or proceedings of the Society. These being sent in exchange or otherwise, to scientific associations and individuals in other countries, would thus become the vehicle for the transmission of this information to the craniographers of the latter places.

"The editors of scientific, medical and literary magazines, journals, reviews, &c., have it in their power greatly to promote craniographic science by inserting in their pages from time to time, and thus disseminating the information obtained in the manner indicated above. This statement particularly applies to medical journals, inasmuch as most of those cultivating craniography are physicians, not a few of whom are in the active public or private practice of their profession."

APPOINTMENTS IN MEDICAL SCHOOLS.—Dr. John G. F. Holston has been appointed to the Chair of Surgery in the National Medical College at Washington, rendered vacant by the resignation of Professor May.

Dr. James B. McCaw, one of the editors of the *Virginia Medical Journal*, has been elected to the Chair of Chemistry in the Virginia Medical College, in place of Professor Martin Scott, resigned.

NEW YORK STATE INEBRIATE ASYLUM.—The corner-stone of this institution was laid on the 24th of September with ceremonies and addresses from several distinguished gentlemen, including Rev. Dr. Bellows, Dr. John Francis, and Hon. Edward Everett. So far as we know this is the first instance of anything of the kind having been undertaken in this country, and we are glad to say that it is due in great part to the efforts and enterprise of the medical profession. Its object is to reclaim confirmed drunkards, to keep them from temptation, and rid society of their presence. It is not expected that the institution will be opened for two years; in the mean while we wish the directors the best success in the accomplishment of their noble undertaking.

CONTRIBUTIONS TO OBSTETRIC JURISPRUDENCE.—Commencing with criminal abortion in our January number, Dr. Horatio R. Storer will present our readers with a series of important papers on obstetric jurisprudence, to which no one in this country has paid so much attention as himself, and which in point of fact has never been, as such, touched upon. Dr. Storer, Senior, three years since was the first to call attention to criminal abortion in an introductory lecture in Harvard University, and a similar address was delivered by Prof. Hodge in the University of Pennsylvania. In February, 1857, Dr. H. R. Storer presented the subject to the Suffolk District Medical Society, and was appointed one of a committee to report upon it, which he did in a very able and forcible manner. Dr. Storer has taken a very decided and praiseworthy position in the matter, and we hope these papers will serve to awaken the attention of and prepare the minds of the profession for the report on criminal abortion in this country, which Dr. Storer is to make to the American Medical Association.

CORRECTION.—In our last issue, in noticing Dr. Forbes's "Nature and Art in the Cure of Disease," it is mentioned in the foot-note that "this is the London edition with an American title-page." We must, however, correct our mistake, and give due credit to Messrs. S. S. & W. Wood, in saying that the work is wholly American in its getting up.

THE MEDICAL AND SURGICAL REPORTER, which has heretofore appeared as a monthly, was presented to us on the 6th of October under a new garb, and will henceforth be issued as a weekly journal, under the editorial management of Drs. Butler and Atkinson. This, with the exception of the *Boston Medical and Surgical Journal*, is the only weekly in this country. London alone supports three weekly journals, and we may therefore assume that under careful management, and with the assistance of the profession, the "Reporter" will take a creditable stand among our many periodicals. We wish the editors the best success in their new enterprise.

VESICO-VAGINAL FISTULE IN EUROPE.—Dr. Bozeman in a letter to the junior editor, dated Dublin, August 26th, thus writes of the *button-suture*:—

"While in Edinburgh, Dr. Fleming, Surgeon to the Richmond Hospital, found a case with fistule, and announced to the class that I would operate to-day; but much to our disappointment the patient became frightened, and concluded not to submit to the operation. Not a case of this description has ever, as far as I can learn, been cured in Edinburgh. I operated twice while there; once in the Royal Infirmary and once in the practice of Professor Simpson. The case in the Infirmary turned out badly, dying on the sixth day from cellular inflammation. I was in the north of Scotland when this occurred, and you can well imagine my surprise upon returning. Fortunately the parts were preserved for me, and the result of the examination proved satisfactory to all present, viz., that the operation, as far as it was concerned, was entirely successful. The fistule was completely closed, and the suture apparatus was perfect in its adjustment. Not a drop of urine escaped from the time of the operation. The case was a very bad one, but I never performed an operation with which I was better pleased. The cervix uteri was shut up in the bladder, and the operation consisted in restoring it to its natural position in the vagina, and in that way closing the opening. Prof. Simpson and all present were delighted with the procedure. The patient, I have since learned, was one of the greatest drunkards in Edinburgh, and was, several days before the operation, beastly drunk. Under these circumstances, no other termination could well have been expected. I performed an operation in the Royal Infirmary at Glasgow, but have not yet heard from it. I received a letter from Mr. Erichsen, while in Edinburgh, stating that the case which I operated upon in London was cured."

Ecraseur.—Dr. Frederick D. Lente of Cold Spring, New York, in a letter to the senior editor, writes in the following terms of the Ecraseur, as used on the continent:—

"I spent my time entirely in Paris, London, and Dublin, mostly in Paris, where I saw many interesting surgical operations, and some novelties. I was particularly pleased with the operation of the Ecraseur in the hands of its inventor, M. Chassaignac. To appreciate its full value, and extensive range of application, one must see him use it, which he certainly does with extraordinary tact and success. Among the operations which I witnessed, I may mention amputation of the *cervix uteri*. He merely dissects the cervix a little from its connection with the bladder, which he considers important, and transfixes it with a trocar to prevent the chain from slipping before applying the latter. In all cases, especially when the part is very vascular, he proceeds *very* slowly to work the lever, resting some seconds between each click of the instrument. This he considers absolutely necessary to the full success of the operation as regards hemorrhage. Another operation was the removal of a large cancerous tumor of the *rectum*, involving the verge of the anus. In order to get the chain completely around and above the base of the tumor, he first transfixed its base from behind forward with a trocar, the point coming out at the perineum; he next passed the chain through the canula of the trocar, which he then removed, and proceeded to divide the tumor into two halves. He then, successively, and without difficulty, amputated each half, first passing a trocar through the base to prevent the chain from slipping from its place. The hemorrhage was trifling compared with what generally occurs in these operations with the knife, and required only the application of a compress and T-bandage.

"He also operated for *varicocele*. First, isolating the veins of the cord from its other constituents, he passed three large needles under them at a little distance from each other, then throwing the chain around them, and thus inclosing a loop of the veins and a portion of the integument of the *scrotum;* this was soon removed by working the lever, without so much as staining the skin with blood. Maisonneuve at La Pitié has, as you are aware, been for some months past amputating limbs with his Ecraseur, which works with a screw instead of a double acting lever. His idea is that he will thus incur less hazard of purulent absorption, which has been carrying off a large majority of his victims of amputation. Dr. Luckley describes his method in a recent number of the *N. Y. Journ. of Medicine.* He argues from the observed fact that comparatively few cases of compound fracture die of this and other allied affections. So he makes his amputations as similar to a case of compound fracture as possible. I saw one stump of a leg entirely healed, that had been subjected to this, in appearance, barbarous procedure, and was informed by American physicians in Paris, who had watched the progress of his cases, some nine or ten I think, that had undergone amputation by this method, that the mortality was decidedly reduced.

"Whether it is a case of *propter hoc* remains, I think, to be decided by a greater number of cases, and a greater lapse of time. Maisonneuve has also been using injections of the perchloride of iron quite extensively, and with good success, for the obliteration of varicose veins. The strength of the liquid used by him is 30° of Baumé, or about one-third of the solid salt, which is too deliquescent to be long kept in this form, to two-thirds of water. A somewhat weaker solution he also uses with success, to arrest hemorrhage from small arteries, and profuse oozing of blood during bloody operations. I know that this agent has also been used in this country for the above objects, but not very extensively."

THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.—At a meeting held on the 13th of October, the following officers were elected for the ensuing year:—

President,	DR. LA ROCHE.
Vice-Presidents,	DRS. STILLÉ and EDWARD HARTSHORNE.
Treasurer,	DR. ADDINELL HEWSON.
Secretary,	DR. DA COSTA.
Assistant Secretary,	DR. J. H. BRINTON.

NECROLOGICAL NOTICES.

GEORGE COMBE.—In the death of this eminent man, which took place on the 14th of August, 1858, while on a visit to a friend near London, the cause of mental progress and improvement has lost one of its most strenuous and able advocates and promoters. For the last forty years his name has been intimately and approvingly connected with a system of mental philosophy known as the phrenological, of which he must be regarded in the light of the most logical and sagacious expounder. Mr. Combe was bred to the law, and became a writer to the *Signet*, which answers very nearly to the title of attorney in England. He continued to practice in his profession down to the year 1838; but his first appearance as an author, and at the same time an indication of the field of inquiry on which he had fully entered, were manifested in the publication of his "Essays on Phrenology." This work at once established his reputation as an able dialectician, even among those who were backward in joining him in his conclusions. Henceforth he devoted his chief energies and a large share of his time to the elucidation of the new system of intellectual and moral philosophy, and to a demonstration of its varied and important bearings on education, social polity and jurisprudence. We cannot in these few lines, meant to commemorate the worth of the man, enter into details of his labors for bettering the condition of his fellow creatures, by his pointing out the many evils which result from a neglect of natural laws, and the ameliorations which necessarily accompany a return to these laws. Nor can we give, at this time, even the titles of his numerous library productions. Of one of them special mention must, however, always be made: we refer to "The Constitution of Man Considered in Relation to External Objects," which has had a circulation in Great Britain and the United States equaled by few books of any description, and has been translated into most of the languages of Europe. Mr. Combe wrote and labored for the masses, for the people in the most comprehensive sense: his reforms were not urged in any factious spirit or for partial application, but in a calm, reasoning and practical manner, adapted both to the comprehension and the wants of those to whom he addressed himself.

Mr. Combe visited this country in the latter part of the year 1838, and remained in it nearly two years. During this period he delivered, in different parts of the United States, lectures to the number of a hundred and fifty-eight on Phrenology. His mastery of the subject, and the new and striking lights in which he presented it, although deriving little aid from the powers of elocution or grace of manner, made these lectures singularly attractive to audiences of the highest education and character in the country. His classes in Philadelphia were larger than those in any other city, on either side of the Atlantic. On his return to Edinburgh, his native city, and always the place of his fixed residence, Mr. Combe published the result of his observations and inquiries during his trans-Atlantic travels, in a work entitled "Notes on the United States of North America, during a Phrenological Visit in 1838–9–40," which contains many apposite details relating to our public improvements, schools, and social and political condition, accompanied with remarks and suggestions, indicating the shrewdness and common sense of a practical philosopher.

Mr. Combe was married in 1833 to a daughter of the celebrated Mrs. Siddons. This lady accompanied him in his travels in this country, and attended him in the last moments of a life, the married portion of which he used to say seemed to him like a happy day. Mr. Combe had reached the seventieth year of his age at the time of his death.

It is with profound regret that we record the death of our young friend, Dr. EDWARD MINTURN, which took place in this city on the 6th of September, from acute phthisis, in the twenty-eighth year of his age. Dr. M. was a highly educated gentleman, a conscientious and judicious practitioner, and honorable and exemplary in all his social relations. For some time he had been one of the physicians to the Philadelphia Dispensary, and had greatly endeared himself to his patients by his kindness, attention, and professional skill. He was also a zealous member of the Academy of Natural Sciences, and devoted most of his leisure time to scientific pursuits. His future was full of promise, and by his death the profession and science, equally with his family and friends, have sustained an irreparable loss.—*Medical News and Library*, October, 1858.

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INDEX.

Abbot, S. J., M.D., on oxide of zinc in night-sweats, 1084.
Abdominal viscera, cancer of, 101.
Abdomen, fibro-fatty tumor of, 517.
  incised wound of, 1070.
Abscess of liver, 169.
  metastatic, of liver, 1075.
  of iliac fossa, new mode of treatment of, 536.
  tubercular of kidney, 1072.
  of ovary, 705.
  of brain, 873, 1074.
  lumbar, 539.
Académie de Médecine, prizes for 1857, 398.
Acetic acid, dilute, in scarlatina, 1088.
Accidents of Knighthood, 587.
Aconite, use of in neuralgia, 934.
Acton, Wm., treatise on prostitution by, review of, 977.
Adams, Robt., M.D., treatise on rheumatic gout, &c., by, notice of, 850.
Addison's disease, case of, 376.
Advertisements, quack, 179.
African edibles, 391.
Albumen, gum, &c., physiological effects of, 126.
Alimentary canal, treatise on diseases of, by Habershon, review of, 236.
Allopathy, 1147.
Amenorrhœa, electro-magnetism in, 1085.
American Medical Association, notice of proceedings of, 775.
Ammonia, valerianate of, in neuralgia, 570, 934.
Amputation at hip-joint, 567.
  of neck of uterus, 951.
  new method of, by Maisonneuve, 947.
  of arm, 1069.
Anæsthesia universalis peripherica, 1106.
Anæsthetics, use of in convulsions, 937.
Anal fistula, its relation to phthisis, 371.
Anatomy, treatise on, in Chinese, by Hobson, notice of, 43.
  pathological, treatise on, by Gross, review of, 1.
    by Andral, review of, 1.
    by Broussais, review of, 1.
Anatomy, pathological, treatise on, by Cruveilhier, review of, 1.
    by Horner, review of, 1.
    by Hasse, review of, 1.
    by Otto, review of, 1.
    by Rokitansky, review of, 1
    by Vogel, review of, 1.
    by Wedl, review of, 1.
  of inflammations, treatise on, by Gendrin, review of, 1.
Anatomy and Physiology, report on, by Mitchell, 105.
Anderson, T. M., M.D., case of ileus by, 176.
Andral, G., M.D., treatise on pathological anatomy by, review of, 1.
Aneurism of aorta, 509, 532, 724.
  of innominata, 511.
  of external iliac, 549.
  femoral, treated by manipulation and compression, 544.
    by ligature, 547, 550.
  popliteal, treated by compression, 545, 546, 579.
Angell, C., M.D., ligature of carotid artery by, 157, 350.
Animal signatures, 398.
Ankle-joint, excision of, 580.
Antidote to poison of rattlesnake, 385.
  to strychnia, 1098, 1099, 1102.
  to chloroform, 1099.
  to many poisons, 1099.
Antimony, tartrate, in colic, 945.
  as an enema, 1096.
Anus, imperforate, 575.
Aorta, aneurism of arch of, 509, 532, 724.
Aortic valves, perforation of, 870.
Apoplexy, infantile, 70.
  after trephining, 320.
  effect of on the intellect, 351.
  of lung, 317.
  of retina, 730.
Appendix vermiformis, perforation of, 360.
Aran, M., on laudanum dressings, 967.
Armor, S. G., M.D., resignation of, 780.
Army, appointments to medical staff of, 970.
Arsenic, cure of cholera by, 165.

Arsenic in skin diseases, 1096.
Artery, dorsalis penis, ligature of, 155.
  carotid, ligature of, 157, 159, 350, 541, 543.
  external iliac, ligature of, 547, 550, 551.
  common iliac, ligature of, 549.
  femoral, ligature of, 550.
  innominate, aneurism of, 511.
  meningeal, dilatation of, 726, 1072.
Arteries, ossification of, in gangrene, 507.
  atheromatous deposit in, 515.
Arthritis, chronic, Treatise on, by Adams, notice of, 850.
  rheumatic, cases of, 713.
Asclepias tuberosa, virtues of, 945.
  Syrica in intermittent fever, 1090.
Ass's milk in atrophy of bones, 505.
Astragalus, necrosis and discharge of, 712.
Asthma, influence of atmospheric changes on, 372.
  iodide of potassium in, 1084.
  treatment and clinical history of, 1134.
Atheromatous deposit in arteries, 515.
Atlee, J. L., M.D., on the écraseur in ovariotomy, 698.
Atrophy, yellow, of liver, 1108.
Auricle, right, functions of, 378.
  ossific deposit in walls of, 532.
Ayres, H. P., M.D., on hydro-cerebral hernia, 73.
Ayres, D., M.D., on dislocation of cervical vertebræ, 747.

BACHE, Franklin, M.D., Dispensatory by, notice of, 465.
Baker, C. H., M.D., reduction of dislocated femur by, 750
Bamberger, Dr., treatise on pathology by, review of, 414
  on yellow atrophy of liver, 1108.
Barclay, A. W., M.D., treatise on medical diagnosis by, review of, 401.
Barker, J. F., M.D., on veratrum viride, 926.
Baudens, M., necrological notice of, 591.
Becquerel and Rodier, treatise on pathological chemistry by, notice of, 263.
Bell, John, M.D., report on materia medica by, 910, 1079.
Bell, Dr. J., on effects of cannabis indica, 942.
Belladonna, use of, to arrest secretion of milk, 946.
Bennett, J. H., M.D. clinical lectures on medicine by, review of, 618.
Benson, Dr., appointment of, 968.
Berard, Prof., on extirpation of pancreas, 765.
Bernard, Ch., on engorgement of cervix uteri, 952.
  on use of carbonic acid gas, 966.
Bibron's antidote for rattlesnake poison, 385, 1100.
Bile, physiology of, 128, 379.
Binz, Dr., on universal anæsthesia, 1106.
Biological Society of Philadelphia, notice of, 193.
Birkett, Mr., case of popliteal aneurism by, 579.
Bird, Golding, M.D., treatise on urinary deposits, review of, 785.
Black, C., M.D., on arsenic in cholera, 165.
Blackman, G. C., M.D., on ligature of arteries, &c., 543, 544, 558, 569, 750.
Bladder, stone in, 753, 754, 756.
  lead-pencil removed from, 754.
  gangrene of, 96.
  chronic inflammation of, 1072.
  removal of stones from, 1127.
Blood, properties and uses of, 135, 761.
  circulation of, 378.
  injection of urea into, 287.
Bœrstler, Dr. G. W., on veratrum viride, 916.
Bones, eburnation of, 312.
  atrophy of, 505.
  scooping of, in caries, &c., 948.
  syphilitic disease of, 949.
  excision of, in British hospitals, 955.
Bonsall, T. C., M.D., on iodide of potassium in syphilis, 1080.
Bony tumor of scrotum, 79, 100.
Botany, works on, by Gray, review of, 22. 265.
Bowditch, H. J., M.D., on paracentesis, &c., 368, 753.
Bowling, W. K., M.D., on creasote in cholera, 1082.
Bowels, intussusception of, 359.
Boylston prize essay, announcement of, 194.
Brain, injury of, 75.
  chronic abscess of, 873.
  chemical composition of, 1104.
  influence of spinal cord on, 1104.
  serous sac of middle ventricle, 1105.
Brannock and Black, Drs., on virtues of sulphate of cinchona, 1090.
Braun, Prof. C., on hydrorrhœa of uterus, 950.
  treatise on uræmic convulsions, &c. by, review of, 1020.
Breant prize not awarded, 971.
Breast, malignant tumor near, 580.
Bright's disease, 327, 727.
Brinton, Wm., M D., treatise on ulcer of the stomach by, review of, 1028.
Brodie, Sir Benjamin, nomination of, 971.

- Brodie, R. T., M.D., reduction of dislocated femur by, 751.
- Brokaw, F. V. L., M.D., on abscess of liver, 169.
- Bronchial tubes, ulceration of, 868.
- Bronzed skin with cirrhosis of liver, 377.
- Broussais, F. J. V., treatise on phlegmasiæ, review of, 1.
- Brown-Séquard on properties and uses of blood, 135, 761.
  - journal of physiology by, notice of, 193, 586.
  - researches on physiology and pathology, review of, 222.
  - on epilepsy, review of, 222.
  - on influences of spinal cord on brain, 1104.
  - on measurement of sensibility in morbid state, 1105.
- Brown, B., M.D., on injections of chlorate of potassa in uterine affections, 1081.
- Bruns, J. D., M D., Essay on Life, notice of, 130.
- Bruns, Victor von, treatise on practical surgery, notice of, 848.
- Buchanan, Prof., methods to facilitate removal of stone from urinary bladder, 1127.
- Buck, G., M.D., on post-fascial iliac abscess, 536.
- Buckingham, C. E., M.D., on imperforate rectum, 151.
- Bucknill, Chas., M.D., treatise on psychological medicine, review of, 826.
- Bulley, on scarlatina anginosa, 1129.
- Bullock's translation of Cazeaux's Midwifery, review of, 254.
- Busch, Prof., notice of death of, 975.
- Butcher, Mr., on excision of knee-joint, 146.
- Button suture in prolapse of the vagina, 64.
  - in Europe, 1150.
- Byrd, H. L., M.D., case of trismus nascentium, 355.
- Byford, W. H., M D., on mercurial muco-enteritis, 362.
  - on treatment of hydrocele, 738.

- CÆCUM, perforation of, 360.
- Calcareous deposits in pleura, 511.
  - in lungs, 515, 328.
- Calcis, os, excision of, 559.
- Calculi, urinary, 319, 724, 753.
  - of curious shape, 324, 329.
  - with sequestrum of bone, 754.
  - report of cases of, by Eve, 756.
  - biliary, in hepatic ducts, 324.
  - landing-net for, 1127.
  - extrusion with the fingers, of, 1127.
- Calorification, physiology of, 115.
- Camman, G. P., M.D., on substitutes for cod-liver oil, 1084.
- Campbell, H. F., M.D., on nervous system, 129.
  - essays on secretory nerves, &c., review of, 222.
  - on traumatic tetanus, 553.
  - on nitrate of silver in vomiting, 1097.
  - Thos., M.D., case of dislocated femur reduced by, 752.
- Camphor antidote to strichnia, 1099.
- Cancer of pancreas, 98, 722, 883.
  - of liver, &c., 101.
  - of ileo-cæcal valve, 319.
  - of several organs, 323.
  - of a cicatrix, 330.
  - of omentum, stomach, &c., 512, 534.
  - of lung and mesenteric glands, 721, 731.
  - of fundus and body of uterus, 874.
  - escharotic treatment of, 138.
  - nature and treatment of, 161.
  - simulated by tubercle of lung, 322.
- Cannabis Indica, effects of, 943.
- Capillary circulation, 861.
- Capsule, supra-renal, disease of, 376, 531.
- Carbon, bisulphuret of, 936.
- Carbonic acid gas, local use of, in diseases of uterus, 966.
- Carbuncle, opiate cerate in, 1117.
- Carnochan, J. M., M.D., Contributions to Surgery, notice of, 656.
- Carotid artery, wound of, 159.
  - ligature of, 159, 350, 541, 543.
- Cartwright, S. A., M.D., on hygienic treatment of phthisis, 371.
- Caruncle, sinking of, after operations for strabismus, 266.
- Catalepsy, nitrate of silver in, 1081.
- Catalogue of Toynbee's preparations, notice of, 42.
- Cataract, remarks on by Fenner, 45.
- Cattle-plague, letter on by Gamgee, notice of, 35.
- Cattle, evil results of over-feeding, by Gant, notice of, 846.
- Cauthorn, R. S., M.D., on the virtues of asclepias Syriaca, 1090.
- Cazeaux, P., treatise on midwifery by, review of, 252.
- Cerebral convolutions, softening of, 506.
- Cervical vertebræ, fracture of, 315.
  - dislocation of, 747.
- Cervix uteri, laceration and severance of, 315.
  - engorgement of, successful treatment of, 952.
  - amputation of, 951.
  - linear écrasement of, 952.
- Census of 1850, mortality statistics of, 334.

Chancre, lectures on by Ricord, review of, 606.
Chapin, Dr., on oil of tansy, 165.
Chemistry, pathological, treatise on by Becquerel and Rodier, notice of, 263.
  inorganic, treatise on by Graham, notice of, 848.
Children, remitting fever of, 341.
  treatise on diseases of, by Meigs, review of, 209.
   by Mauthner, notice of, 505.
   by Churchill, notice of, 466.
Chisholm, J. C., M.D., on tetanus, 552.
  appointment of, 780.
Chlorate of potash, action of, &c., 387.
  in leucorrhœa and ulcer of os uteri, 1081.
  in hemorrhage, 1093.
  in mercurial stomatitis, 1081.
  in typhoid fever, 1088.
Chloroform in delirium tremens, 939.
  in convulsions, 941.
  in strychnia poisoning, 1099.
  ether, antidote to, 1099.
Cholera, arsenic in, 165.
  progress of, 194.
  infantum, 356.
  use of creasote in, 1082.
  observations on, 1111.
Chorea, case presenting symptoms of, 851.
  chemical composition of brain, 1104.
Christian, E. P., M.D., on therapeutical applications of electro-magnetism, 1085, 1091.
Chromic acid applied to warts, 156.
Churchill, Fleetwood, M.D., treatise on diseases of children, notice of, 466.
Cicatrix, cancer of, 330.
  in the lungs, 328.
Cinchona, sulphate of, virtues of, 1090.
Cicuta in sick-headache, 946.
Circulation, physiology of, 111, 378.
Cirrhosis of liver, and bronzed skin, 377.
  with diabetes, 710.
Claiborne, J. H., M.D., on treatment of remitting fever, 344.
  on camphor as antidote to strychnia, 1098.
Clamp suture in prolapse of vagina, 64.
Clavicle, relations of pleura with, 119.
Climate, effects of, on tuberculous disease, 373.
Clinical lectures on medicine, by Bennett, review of, 618.
Cobb, R., M.D., on veratrum viride, 926.
Cod-liver oil in chest diseases, 162.
  substitutes for, 1084.
Coffee in the Turkish fashion, 191.
  antidote to many poisons, 1099.
Colby, M. F., M.D., on functions of large intestine, 131.
Colic, treatment of with antimony, 946.
Colin, M., on extirpation of pancreas, 765.
College of spirits in Paris, 972.
Collodion in orchitis, 379.
  and castor oil as an artificial cuticle, 580.
Colloid cancer of omentum, 534.
Colzey, E. F., M.D., appointment of, 968.
Combe, George, M.D., necrological notice of, 1152.
Conjunctivitis, granular, use of poke-root in, 1083.
Constipation, prolonged, 1113.
Consultations with homœpaths, 779.
Contributions to operative surgery, by Carnochan, notice of, 656.
Convulsions, their pathology and treatment by Wible, 56.
  puerperal, 311.
  etherization in, 937.
  stramonium in, 941.
Cornea, hairy mole on, 324.
Corn as an antiperiodic, 970, 1091.
Cornell, W. M., M.D., on arsenic and stillingia, 1096.
Coulson, Wm., on affections of joints in puerperal women, 581.
Coxalgia, nature and treatment of, by Gross, 658.
Coxe, E. J., M.D., on sulphate of zinc in night-sweats, 1084.
Crampton, Sir Philip, death of, 974.
Crary, D., M.D., on laryngotomy, 733.
Crawcour, J. L., M.D., on removal of warts, 156.
Creasote in dysentery and cholera infantum, 1082.
  in acute cholera, 1082.
Critchett, Mr., cure of glaucoma by operation, 382.
Crosby, J., M.D., on ununited fracture, 745.
Croton oil in dropsy, 1087.
Cruveilhier, J., treatise on pathological anatomy, review of, 1.
Currey on oil of erigeron, 1093.
Cutter, B., M.D., on reduction of dislocated thumb, 749.
Cyanosis, 522.
Cystic tumors on nates of fœtus, 313.
  tumor on nose, 712.
  growths on intestines, 1074.
Cysts of liver expelled through lungs, 333.
  expectoration of, 506.
  ovarian, in child, 523.
  of thyroid body, 880.
  of brain, 1105.

DALTON, J. C., M.D., on bile, 128.
Daret, H., M.D., on aneurism of crural artery, 550.
Davis, R., on imperforate anus, 575.
Deadrick, Dr. W. H., necrological notice of, 205.
Deaf and dumb, observations on, 1037.
Deformity of neck of thigh-bone, 316.
Delirium tremens, shower bath in, 960.
    chloroform in, 939.
Detection of poisons, treatise on by Otto, notice of, 264.
Dethan, Dr., on the use of chlorate of potash, 387.
Diagnosis, medical, treatise on, by Barclay, review of, 401.
Diarrhœa, nitrate of silver in, 504.
Dickson, Dr. Saml. H., appointment of, 588.
Dictionary of medical terms by Dunglison, notice of, 44.
Digestion, contributions to physiology of, 109.
Dilatation of heart, 521, 867.
Diseases of children, treatise on by Meigs, review of, 209.
    by Churchill, notice of, 466.
Diseased meat, effects of on human health, 35, 483.
Dislocation of long bones with reference to resection, 565.
    of knee, 76.
    of cervical vertebræ, 747.
    of fingers and thumb, 749.
    of thumb, improved method of reduction, 749.
    of femur reduced by manipulation, 750.
        by pulleys, 752.
    of head of tibia, 752.
Dispensatory, by Wood and Bache, notice of, 465.
Draper, J. C., M.D., on red line of gums in phthisis, 364.
Dropsy, use of croton oil in, 1087.
Duchatelet-Parent, treatise on prostitution by, review of, 977.
Dugas, L. A., M.D., on fracture of neck of scapula, 738.
Dunglison, Robley, M.D., Medical Dictionary by, notice of, 44.
    treatise on materia medica, &c., notice of, 44.
    R. J., M.D., letter on hospitals of Paris, 81.
    observations on the deaf and dumb, 1037.
Dupierris, M., M.D., reduction of dislocated femur, by, 751.
Dupree, Dr., on chlorate of potash, 1093.
Dysentery, relation of to abscess of liver, 169.
    epidemic, 293, 357, 358.
    creasote in, 1082.
    nitrate of potash in, 1082.
    cathartics in, 1086.

EAR, Toynbee's catalogue of morbid preparations of, notice of, 42.
    plastic operation upon, 78.
Earle, Pliny, M.D., on paralysis of the insane, 356.
Eburnation of bone, 312.
Ecstasy, case of, 353.
Ecraseur in ovariotomy, 698.
    as used in Paris, 1151.
Edibles, African, 391.
Editorial change, 398.
Electro-magnetism, therapeutical uses of, 1085, 1091.
Embolia, nature and treatment of, 415, 568.
Encephaloid of thigh, 98.
    of testicle, 514.
    of kidney, 524.
Endemic diseases of the South, liability of negroes to, 383.
Eneuresis cured by pareira brava, 1085.
Enteritis, mercurial, 362.
Epidemic dysentery, 293, 357.
Epidemic fever with erythematic pharyngitis, 348.
Epidemics and epizootics, relations between, 483.
Epiglottic cartilage, lesions of, 369.
Epilepsy, ligature of carotid artery for, 157.
    researches on, by Brown-Séquard, review of, 222.
    clinical observations on, 384.
Epizootics, original researches on, by Sutton, 483.
Erectile tumor of urethra, 509.
Ergot in hemorrhage, 1094.
    of wheat as an ecbolic, 1095.
Erigeron, oil of, in hemorrhages, 1093.
Erysipelas, tobacco in, 938.
    iron in, 1093.
Escharotic treatment of cancer, 138.
Ether, antidote to chloroform, 1099.
Eve, Paul F., M.D., case of laryngo-tracheotomy by, 737.
    lithotomy operations by, 756.
Excision of joints, 142.
    of knee-joint, 146.
    of maxillæ, 557, 558.
    of humerus, 555, 556.
    of os calcis, 559.
    of hip-joint, 560.
    of ankle-joint, 580.
    of bones and joints in British hospitals, 955.

Excito-secretory system of nerves, by Campbell, 129.
Exostosis of scapula, 331.
 of tibia and fibula, 531.
 occupying orbit and nasal cavity, 554.
Eye, injury of, 1067.
Eyeball, prominence of, after operations for strabismus, 266.

FATTY degeneration of supra-renal capsule, 530.
Fatty liver, 534.
Femoral aneurism, 544, 547, 550, 551.
Femur, deformity of neck of, 316.
Femur, excision of upper extremity for necrosis, 325.
Femur, dislocation of, reduced by manipulation, 750.
Fenner, C. S., M.D., on cataract, 45.
 lithotrity by, 753.
 on phytolacca decandra in granular conjunctivitis, 1083.
Fever, intermittent, 344.
 yellow, 348.
 remittent, 344.
 epidemic with erythematic pharyngitis, 348.
Fibro-fatty tumor of abdomen, 517.
Fibrous tumor of uterus removed during labor, 527.
Fibroid degeneration of liver and kidney, 531.
Fibrous tumor of breast, 706.
Fingers, apparatus for reducing dislocations of, 749.
Fischer, Emil, M.D., foreign abstracts by, 761, 947, 1104.
Fistula of gall-bladder, 95.
Flint, Austin, Senior, M.D., report on practical medicine by, 341.
 appointment of, 780.
Flint, Austin, Junior, M.D., on capillary circulation, 861.
Fœtal monstrosity, 315.
Forbes, Sir John, treatise on nature and art in the cure of disease, review of, 800.
Forearm, injury of, 1065.
Foreign body in œsophagus, 158.
 in stomach and bowels, 359.
 in bladder, 754.
Förster, Prof., serous sac of brain, 1105.
Fracture of skull, 75.
 of humerus, 310.
 of cervical vertebræ, 315, 518.
 of neck of scapula, 738.
 of spine, 741.
 of pelvis, 742.
 of neck of thigh-bone, 743.
 ununited, 745, 746.
Fracture, spontaneous, in rachitis, 505.
Frazier, A., M.D., on epidemic dysentery, 357.
Frick, Chas., M.D., on cirrhosis of liver, with bronzed skin, 377.
 appointment of, 586.
Fries, G., M.D., on radical treatment of hydrocele, 738.
Frost bites, treatment of, 1085.
Function of right auricle, 378.
Fungus of testicle, 103.
Fusion of medical journals, 398.

GAGE, on ioduretted glycerine, 1097.
Gallaher, Dr., on chlorate of potash in mercurial stomatitis, 1081.
Gall-bladder, fistula of, 95.
 diseases of, 361.
Gall-stones impacted in hepatic ducts, 324.
Gamgee, J. S., letter on diseased meat, review of, 35.
Gangrene of bladder, 96.
 with ossification of arteries, 507.
 cured by pyroligneous acid, 1071.
Gant, F. J., treatise on over-feeding of cattle, notice of, 846.
Garrett, Dr. F. M., on chloroform in delirium tremens, 939.
Gastric irritation a cause of puerperal convulsions, 311.
Geddings, E., M.D., lectures on surgery, notice of, 843.
Gelseminum, properties and uses of, 931.
Gendrin, A. M., D.M., treatise on anatomy of inflammations, review of, 1.
Gentiana quinqueflora, virtues of, 1090.
Gerhardt, Dr., on thrombus of cerebral sinuses, 954.
Gibb, G. D., M.D., case of wound and ligature of carotid artery, 159.
Gibbs, O. C., M.D., case simulating chorea, 851.
 on strychnia in sciatica, 936.
 on cathartics in dysentery, 1086.
Glaucoma, new operation for, 382.
Glottis, spasm of, laryngotomy in, 733.
Glycerine in sore nipples, 1097.
 ioduretted, preparation of, 1097.
Goodrake, Dr., on asclepias tuberosa, 945.
Gorham, Dr., on veratrum viride, 928.
Gout, rheumatic, treatise on by Adams, notice of, 850.
Graham, Thos., treatise on inorganic chemistry, notice of, 848.
Gray, Asa, M.D., botanical works by, review of, 22, 265.
Green, Horace, M.D., on veratrum viride, 914.
 on lesions of epiglottis, 369.

Gregory, Dr. Wm., necrological, notice of, 783.
Gros, Dr. L., on pepsin in vomiting of pregnancy, 965.
Gross, S. D., M.D., elements of pathological anatomy, review of, 1.
  invention of a new tourniquet by, 540.
  essay on hip-joint disease by, 658.
  on dislocation of head of tibia, 752.
  removal of lead-pencil from bladder by, 754.
Gums, red line of in diagnosis of phthisis, 364.
Gunn, M., M.D., on lumbar abscess, 539.
  resection of lower jaw by, 556.
  case of ununited fracture by, 746.

Habershon, S. O., M.D., treatise on disease of alimentary canal, review of, 236.
Hairy mole on cornea of ox, 324.
Hammond, W. A., M.D., on nutritive value of albumen, starch, and gum, 126.
  on injection of urea into the blood, 287.
Hammer, J. M., M.D., case of intussusception, 359.
Hamilton, Frank, M.D., on aneurism, 547.
  on dislocations and excisions of long bones, 565.
Handy, W. R., M.D., on veratrum, viride, 923.
Hare, Dr. Robert, necrological notice of, 782.
Harper, J. D., M.D., on scarlatina, 345.
Harrison, Dr. Robt., death of, 783.
Hartshorne, E., M.D., report on practical surgery by, 536, 732.
Haskell, B., M.D., essay on physiology of nervous system, notice of, 130.
Hasse, C. E., M.D., treatise on pathological anatomy, review of, 1.
Haughton, R. E., M.D., tracheotomy by, 736.
  on veratrum viride, 929.
  on podophyllum and leptandria, 1079.
Hay, Dr. W., on valerianate of ammonia, 934.
Hays, Dr., on treatment of frost bites, 1085.
Heart-clots, 100.
Heart, dilatation of, 521.
  malformation of, 522.
  fatty degeneration of, 1106.
Hæmoptysis, endemic, 371.
Hemorrhages, passive, chlorate of potash in, 1093.
  oil of erigeron in, 1093.
Hemorrhages, passive, ergot in, 1094.
  ice in, 1094.
  nitric acid in, 1094.
Henry, G. R., M.D., reduction of dislocation of femur by, 751.
Hepatic abscess, 525.
Hernia, reduction of by compression, 383.
  strangulated, 507.
  radical cure of, 758.
  hydro-cerebral, 73.
Herpin, Dr. T., observations on epilepsy by, 384.
Hewson, A., M.D., on strabismus, 266.
Hip-joint, excision of, 560.
  amputation at, 567.
  observations on tuberculosis of, by Gross, 658.
Hippophagy, 399.
Hird, Mr., on cancer and its treatment, 161.
Histology of nervous system, 133.
Hixon, C., M D., on luxation of knee-joint, 76.
Hobson, B., treatise on anatomy, in Chinese, notice of, 43.
Hogs, epizootic disease among, 483.
Holston, J. G. F., M.D., appointment of, 1149.
Homœopaths, consultation with, 780.
Horner, W. E., M.D., treatise on morbid anatomy, review of, 1.
Hospitals of Paris, 81.
Hullihen, Dr. S. P., biographical sketch of, 199.
Human histology, treatise on by Peaslee, review of, 260.
Humerus, fracture of, 310.
  excision of, 557, 558.
Hunt, S. B., M.D., resignation of, 780.
Hunton, Dr. A., on hydrocephalus, 944.
Hutchinson, J. C., M.D., on laceration of urethra, 154.
  on ligature of artery of penis, 155.
Hydrocele, diagnosis of, 381.
  radical treatment of, 738.
Hydrocephalus treated with lobelia, 944.
Hydrophobic hysteria, 349.
Hygienic treatment of phthisis, 371.
Hypertrophy of prepuce, 155.

Ice in hemorrhages, 1094.
Ileo-cæcal valve, cancer of, 319.
Ileus, case of, with operation for, 176.
Iliac artery, ligature of, 547, 549, 550, 551.
Iliac fossa, abscesses of, 536.
Imperforate anus and rectum, 151, 575, 727.
Indigenous medicinal plants, 944.
Infantile apoplexy, 70.

- Infant mortality in large cities, by Reese, 375.
- Innominate artery, aneurism of, 511.
- Insanity, treatise on, by Bucknill and Tuke, review of, 826.
  - influence of pregnancy and delivery upon, 1145.
- Institutes of medicine, treatise on, by Paine, review of, 807.
- Intestinal obstruction, 176.
- Intestine, large, functions of, 131.
  - peristaltic motion of, 769.
- Intellect, effect of apoplexy upon, 351.
- Intercostal neuralgia, 355.
- Intermittent fever, treatment of, 343.
  - nitric acid in, 1089.
  - asclepias Syrica in, 1090.
  - sulphate of cinchonia in, 1090.
  - gentiana quinqueflora in, 1090.
  - electro-magnetism in, 1090.
  - indian-corn meal in, 1090.
  - prepared chalk and vinegar in, 1092.
  - confection of cinchona in, 1091.
- Intussusception of bowels, 359.
- Iodide of potassium in syphilis, 1080.
  - injection of, in leucorrhœa, 1081.
  - in asthma, 1084.
  - as an antigalactic, 1116.
- Iodine in ovarian tumors, 1082.
  - in neuralgia, 1097.
- Iron in erysipelas, 1093.
- Isaacs, C. E., M.D., on extent of pleuræ above clavicles, 119.
  - on structure and functions of kidney, 120.

- Jacubowitsch, M., on histology of nervous system, 133.
- Jameson, Dr. R. H., on veratrum viride, 915.
- Jarvis, Dr. E., on mortality statistics of U. S. census, review of, 334.
- Jauncy, W., on lupuline, 570.
- Jenner, monument to, 192, 781, 974.
- Jessamine, yellow, medicinal virtues of, 931.
- Jewell, W., M.D., on mortality of Philadelphia, 86.
- Johnson, J. G., on fractures of neck of femur, 744.
  - W. J., M.D., on epidemic dysentery, 293.
- Johnston, Dr. C., on tracheotomy, 735.
- Joints, excision of, 142, 955.
  - affections of in puerperal women, 581.
- Jones, Dr. Joseph, appointment of, 586.
- Journal, American Veterinary, notice of, 586.
- Journal of Physiology, by Brown-Séquard, notice of, 586.
- Jurisprudence, obstetric, 1149.

- Kerr, J. G., M.D., on bony tumor of scrotum, 79.
- Kidney, structure and functions of, 120.
  - tubercle of, 517, 868.
  - suppuration of, 518.
  - encephaloid of, 524.
  - fibroid degeneration of, 531, 727.
  - single, 715.
- King, W. R., M.D., on nitrate of silver in catalepsy, 1081.
- Kinloch, R. A., M.D., on excision of hip-joint, 560.
- Kluge, J. P., M.D., on medullary sarcoma, 307.
- Knee-joint, excision of, 146.
  - dislocation of, 76, 752.
- Knight, Dr. N. J., on etherization in convulsions, 937.

- Laceration of urethra, 154.
  - of cervix uteri, 315.
- Landeli, R., M.D., vaccine in smallpox, 1102.
- Landing-net for calculi, 1128.
- Langenschwartz, Dr., on antidote to many poisons, 1099.
- Laryngotomy, 733.
- Laryngo-tracheotomy, 737.
- Larynx, introduction of probang into, 78.
  - piece of beef in, 735.
  - ulceration of, 868, 872.
- Laudanum dressings in affections of uterus, 967.
- Lawson, L. M., M D., on precursory stage of phthisis, 366.
- Lebert, Prof., on pulmonary tuberculosis, 1107.
  - observations on cholera by, 1111.
- Lectures on diseases of women, by West, review of, 594.
  - on chancre, by Ricord, review of, 606.
  - clinical, on medicine, by Bennett, review of, 618.
  - on principles and practice of physic, by Watson, notice of, 653.
- Lee, E., on effects of climate in tuberculous disease, 373.
- Lenhossek, Prof., on structure of nervous centres, 136.
- Lente, F. D., M.D., on medication of larynx and trachea, 78.
  - on fracture of spine, 741.
- Leptandria, virtues of, 1079.
- Letherman, W. H., M.D., on virtues of may-apple, 1086.
- Leucorrhœa, iodide of potassium in, 1081.
  - chlorate of potassa in, 1081.
- Levergood, J. M., M.D., on puerperal convulsions, 311.
- Levezey, Dr. H., on veratrum viride, 916.

Levis, R. J., M.D., on reduction of dislocation of fingers, 749, 753.
Life, essay on, by Bruns, notice of, 130.
Ligation of arteries, 155, 157, 159, 350, 541, 543, 547, 549, 550, 551.
Lithotomy operations, 754, 756.
Lithotrity, 753.
Liver, fatty degeneration of, 93.
  cancer of, 101, 731.
  cysts of, 333.
  cirrhosis of, with bronzed skin, 377.
    with diabetes, 710.
  medullary sarcoma of, 307.
  enlargement of, 514.
  abscess of, 525.
  fibroid degeneration of, 531, 868.
  fatty degeneration of, 534.
  tubercle of, 1076.
  acute yellow atrophy of, 1108.
  nutmeg, 1110.
Lobelia in hydrocephalus, 944.
Lopez, A., M.D., injury of forearm, 1066.
  injury of eye, 1067.
  physiological surgery after amputation, 1069.
  incised wound of abdomen, entering intestine, 1070.
  muscular contusion and disruption of fibres, 1070.
  gangrene cured by pyroligneous acid, 1071.
Lossetti, Dr., on collodion in orchitis, 379.
Lumbar abscess, 539.
Lungs, apoplexy of, 317.
  tubercle of, 711.
  tubercle of simulating cancer, 322.
  cancer of, 721.
  cicatrix and chalky deposits in, 328, 515.
  cyst of, 506.
Lupuline, action of, 570.

Maisonneuve, M., new method of amputation, by 947.
Malformation of heart, 522.
Malpighian bodies, function of, 120.
Mal-practice, suits for, 195, 389.
Malignant tumor of breast, 580.
Mammary gland, fibrous tumor of, 706.
Manipulation, reduction of dislocations by, 750.
Manual of detection of poisons, by Otto, notice of, 264.
Marsden, Mr., on secretion of urinary constituents from skin, 174.
Materia medica, report on, by Bell, 910, 1079.
Mauthner, L. W., M.D., nitrate of silver in serous diarrhœa; ass's milk in atrophy of bones; spontaneous fractures in rachitis, 504.
Mauthner, L. W., M.D., necrological notice of, 783.
Maxillæ, resections of, 555, 556.
Maxson, E. R., M.D., on dislocation of cervical vertebræ, 747.
Mayes, Dr. J. A., on yellow jessamine, 931.
Mayer, Dr. C., on amputation of cervix uteri, 951.
McAlmont, C., M.D., on hæmoptysis, 367.
McCaw, J. B., M.D., strychnia in sick-headache, 946.
  appointment of, 1149.
McCreedy, B. W., M.D., on effects of apoplexy on intellect, 351.
McClellan, Dr. J. H. B., appointment of, 968.
McElbright, T. G., M.D., reduction of dislocation of femur by, 751.
McGugin, D. L., M.D., on hydrophobic hysteria, 349.
  on veratrum viride, 924.
  on ergot of wheat, 1095.
McMate, W. H., M.D., on virtues of creasote, 1082.
Meat, diseased, letter on, by Gamgee, notice of, 85.
Meckley, J., M.D., case of fracture of humerus by, 310.
Medical students in U. S. in 1857, 585.
Medical diagnosis, treatise on, by Barclay, review of, 401.
Medicine, clinical lectures on, by Bennett, review of, 618.
  institutes of, treatise on, by Paine, review of, 807.
  psychological, treatise on, by Bucknill and Tuke, review of, 826.
Medullary sarcoma, case of, 307.
Meigs, J. F., M.D., treatise on diseases of children by, review of, 209.
Meissner, Dr., on operative midwifery, 1142.
Meningitis, with tubercle in lungs, 706.
Meningeal artery, dilatation of, 726.
Menstruation during pregnancy, 965.
Mercurial muco-enteritis, 362.
Mercier, A., M.D., on ligature of iliac artery, 550, 551.
Merei, Dr. Schœpf, necrological notice of, 591.
Mesentric glands, cancer of, 721, 731.
Metamorphosis of tissues, 114.
Metcalfe, Saml., M.D., necrological notice of, 206.
Meyer, Dr., on temperature in patients, 1116.
Midwifery, treatise on, by Cazeux, review of, 252.
  by Miller, review of, 437.
  statistics of operative, 1142.

Milk, suppression of by belladonna, 946.
Miller, H., M.D., treatise on obstetrics by, review of, 437.
  resignation of, 585.
Mineral springs, 186.
Minturn, Edward, M.D., necrological notice of, 1153.
Mitchell, S. W., M.D., report on anatomy and physiology by, 105.
  J. K., M.D., necrological notice of, 588.
  Dr. F., case of popliteal aneurism by, 545.
Monstrosity, fœtal, 315, 397.
Morbus coxarius, nature and treatment of, by Gross, 658.
  excision of hip-joint in, 560.
Morris, Caspar, M.D., essay on scarlet fever by, review of, 1010.
Morrogh, C., M.D., on excision of os calcis, 559.
Mortality of Philadelphia, 86.
Mortality statistics of U. S. census, by Jarvis, review of, 334.
Mott, A. B., M.D., on removal of exostosis, 554.
Mühlig, Prof., on yellow atrophy of liver, 1108.
Müller, Johannes, M.D., necrological notice of, 783.
  M., chemical composition of brain, 1104.
Murphy, Dr. C. H., on veratrum viride, 921.
Muscular motion, essay on, by Watters, notice of, 130.
  contusion, with disruption of fibres, 1070.
Mussey, W. H., M.D., on resection of maxillæ, 555.
  R. D., M.D., on fractures of neck of femur, 743.

NASAL CAVITIES, removal of exostosis from, 554.
Nates, cystic tumors of, 313.
Nature and art in the cure of disease, treatise on, by Forbes, review of, 800.
Naval medical corps, appointments to, 970.
Necrosis of upper extremity of femur, 325.
Negroes, liability of, to endemic diseases of South, 383.
Nerves, excito-secretory system of, essay on by Campbell, review of, 129, 222.
Nervous system, structure of, 133, 136.
  effect of red blood upon, 135.
  contributions to physiology of, by Brown-Séquard, 107.
Nervous centres of uterus, 767.
Neuralgia, valerianate of ammonia in, 570.
Neuralgia, intercostal, 355.
  iodine in, 1097.
Newson, Dr. B. T., on veratrum viride, 929.
New York State Inebriate Asylum, 1149.
Nichols, A. W., M.D., contributions to pathology, &c., by, 343, 353, 355, 374.
Nitrate of silver in diarrhœa, 504.
  in catalepsy, 1081.
  in vomiting in pregnancy, 1097.
  in oxyuris vermicularis, 1116.
  of potash in dysentery, 1082.
Nitric acid in pertussis, 1082.
  in intermittent fever, 1089
  in hemorrhage, 1094.
Norton, J. C., M.D., on cicuta in sick-headache, 946.
Norwood, Dr. W. C., on veratrum viride, 929.
Nott, Dr. J. C., resignation of, 780.
  on acclimation of negroes, 383.
Nutmeg liver, 1110.
Nutrition, growth, &c., contributions to physiology of, 114.
Nutritive value of albumen, starch, and gum, by Hammond, 126.

OBSERVATIONS on the deaf and dumb, 1037.
  on cholera, 1111.
  on temperature of patients, 1114, 1116.
Obstetrics, treatise on, by Miller, review of, 436.
  by Cazeaux, review of, 252.
O'Connor, Dr., on valerianate of ammonia, 570.
Œsophagus, foreign body in, 158.
Oil, cod-liver, in chest diseases, 162.
  of tansy, toxicologically considered, 165.
Omentum, cancer of, 512, 534.
Opiate cerate in carbuncle, 1117.
Orbit, removal of exostosis from, 554.
Orchitis treated with collodion, 379.
Osgood, Dr. C., on veratrum viride, 914.
Otto, A. W., M.D., treatise on morbid anatomy by, review of, 1.
  Dr. Fr. Jul., treatise on detection of poisons by, notice of, 264.
Ovarian cyst in an infant, 523.
  tumors, treated by iodine, 1082.
Ovary, abscess of, 705.
Ovary, extirpation of, 698.
Oxyuris vermicularis, nitrate of silver in, 1116.

PÆONIA officinalis, virtues of, 944.
Paine, Martyn, M.D., treatise on institutes of medicine by, review of, 807.
Pancreas, cancer of, 98, 722, 883.

Pancreas, enlargement and induration of, 332, 515.
  extirpation of, 765.
  function of, 379.
Pancoast, Joseph, M.D., plastic operation by, 78.
Paracentesis in pleurisy, 368.
Paralysis of the insane, 356.
  recovery from, 355.
Pareira brava in enuresis, 1085.
Parker, E. H., M.D., on cholera infantum, 356.
  W., M.D., on iron in erysipelas, 1093.
Parotid gland, extirpation of, 732.
Pathological Society of Philadelphia, proceedings of the, 93, 312, 506, 705, 867, 1072, 1152.
Pathology *versus* phrenology, 196.
Pathology, treatise on by Bamberger, review of, 414.
Paton, G., M.D., on the perceptive power of the spinal cord, 467, 703.
Peaslee, E. R., M.D., treatise on histology by, review of, 260.
Pelvis, fracture of, 742.
Pepper, W., M.D., on diseases of gall-bladder, 361.
Pepsin in vomiting of pregnancy, 965.
Perceptive power of spinal cord, 467, 703.
Perforation of cæcum and appendix, 360.
  of aortic valves, 872.
Pericardium, adhesion of, with dilatation of heart, 867.
Pericarditis, 1106.
Peristaltic action of intestines, 769.
Peritoneum, tubercle of, 1076.
Pertussis, nitric acid in, 1082.
Pharyngitis, epidemic, 348.
Philadelphia, mortality of, 92.
Phillips, D. B., M.D., on corn as an anti-periodic, 970, 1091.
  H. L., M.D., on strychnia poisoning, 1099.
Phthisis, influence of hygiene upon, 371.
  precursory stage of, 366.
  red line of gums in diagnosis of, 364.
  novel cure for, 972.
Physician's visiting list for 1859, notice of, 1037.
Physiological properties and uses of blood, 761.
  surgery after amputation, 1069.
Physiology and Pathology, researches in, by Brown-Séquard, review of, 222.
  journal of, by Brown-Séquard, notice of, 586.
Phytolacca decandra in granular conjunctivitis, 1083.
Pirrie on puerperal convulsions, 1138.
Plastic operation upon ear, 78.
Playfair, Dr. Lyon, appointment of, 971.
Pleuræ, extent of above clavicles, 119.
  calcareous deposits in, 511.
Pleurisy, paracentesis in, 368.
Pleurisy root, properties of, 945.
Pneumonia, treatment of, 364.
  by quinine, 1092.
  at Belleveu hospital, 363.
Pneumothorax, case of, 374.
Podophyllum peltatum, virtues of, 1079, 1086.
Poisons, treatise on detection of, by Otto, notice of, 264.
Polypus, uterine, removed by écraseur, 160.
Popliteal aneurism, 545, 546, 579.
Post-fascial abscess of iliac fossa, 536.
Potton, Dr., treatise on prostitution by, review of, 978.
Powell, R. D., M.D., on treatment of yellow fever, 348.
Practical surgery, treatise on by Von Bruns, notice of, 848.
Practice of medicine, treatise on by Watson, notice of, 653.
  by Wood, notice of, 1036.
  by Tanner, notice of, 1036.
Pregnancy, influence of on development of tubercle, 372.
  influence of on insanity, 1145.
Prizes at the Académie de Médecine, 398.
Probang, introduction of into larynx, 78.
Prominence of eyeball after operations for strabismus, 266.
Prolapse of vagina, 64.
Prolapsus uteri, amputation of cervix in, 951.
Prostitution, treatise on by Duchatelet, review of, 977.
  by Acton, review of, 977.
  by a physician, review of, 977.
  by Potton, review of, 978.
Psychological medicine, treatise on by Bucknill and Tuke, review of, 826.
Puerperal convulsions, 311, 1138.
Puerperal women, affections of joints in, 581.
Pulmonary tuberculosis, 1107.
Pyæmia, 581, 770.
Pylorus, cancer of, 512.
Pyroligneous acid in gangrene, 1071.

QUACK advertisements in religious newspapers, 179.
Quarantine convention, 399.
Quinine in asthenic pneumonia, 1092.

RACHITES, spontaneous fracture in, 505.
Rattlesnake, antidote to poison of, 385, 1100.
Read, Ezra, M.D., on mortality statistics, 334.

Read, Wm., M.D., on tartrate of antimony, 1096.
Rectum, imperforate, 151, 727.
Reese, D. M., M.D., on infant mortality, 375.
Reid, D. W., M.D., treatise on ventilation by, notice of, 1035.
Remitting fever of children, 341.
  treatment of, 344.
Report on anatomy and physiology, by Mitchell, 105.
  on practical medicine, by Flint, 341.
  on practical surgery, by Hartshorne, 536, 732.
  on materia medica and therapeutics, by Bell, 910, 1079.
Reproduction, contributions to physiology of, 116.
Researches in physiology and pathology, by Brown-Séquard, review of, 222.
Resection of maxillæ, 555, 556.
  of humerus, 557, 558.
  of femur, 560.
  of long bones after dislocation, 556.
Respiration, contributions to physiology of, 112.
Retina, syphilitic inflammation of, 380, 708.
  apoplexy of, 731.
Rezzonico, Dr., on nutmeg liver, 1110.
Rheumatic gout, treatise on by Adams, notice of, 850.
  arthritis, cases of, 713.
Rice, David, M.D., on foreign bodies in œsophagus, 158.
Richardson, Dr. T. G., appointment of, 782.
Ricord's lectures on chancre, review of, 606.
Riggs, J. W., M.D., on radical treatment of hernia, 758.
Roemaer, Dr., on iodine in ovarian tumors, 1082.
Rokitansky, Carl, treatise on morbid anatomy by, review of, 1.
Rousset, Prof., on iodide of potassium as an antigalactic, 1116.
Royle, Dr. Forbes, necrological notice of, 591.
Rupture of uterus, 1137.

SALTER, Hyde, M.D., on asthma, 1134.
Sarkin, 1104.
Saunders, D.D., M.D., on red line of gums in phthisis, 364.
Savage, Dr., removal of uterine polypus by, 160.
Secretion, contributions to physiology of, 112.
Secretory and excito-secretory nerves, essays on by Campbell, review of, 222.
Sédillot, Prof., on scooping of bones, 948.
Scarlatina, treatment of, 345.
  anginosa, 1129.
Scarlet fever, treatise on by Morris, review of, 1010.
  acetic acid in, 1088.
Scapula, exostosis of, 331.
  fracture of neck of, 738.
Schenck, B. F., M.D., on acetic acid in scarlatina, 1088.
Schiell, Dr. Jas., on bisulphuret of carbon, 936.
Schultz, Dr., on nitrate of silver in worms, 1116.
Schutzenberger, Prof., on emboli, 568.
Sciatica, strychnine in, 936.
Scooping of bones in caries, &c., 948.
Scrotum, bony tumor of, 79, 100.
Shapter, Thos., M.D., on functions of right auricle, 378.
Shelby Medical College, organization of, 781.
Shoulder-joint, case of obscure injury of, 104.
Shower-bath in delirium tremens, 960.
Sigmund, Dr., on syphilis of bones and cartilages, 949.
Silver sutures in surgery, discourse on by Sims, review of, 635.
Sims, J. Marion, M.D., discourse on silver sutures by, review of, 635.
Skin, plates of diseases of, by Wilson, notice of, 466.
Skull, fracture of, 75.
Slater, Dr., case of pebble in trachea by, 734.
Smallpox cured by vaccine matter, 1102.
Smith, Dr. E., on cod-liver oil, 162.
  J. L., M.D., on remitting fever, 341.
Snow, Dr. John, necrological notice of, 975.
Special senses, contributions to physiology of, 108.
Spiegelberg, Dr. O., on nervous centres of uterus, 767.
  on peristaltic action of bowels, 769.
Spina bifida, treatment of, 1117–1127.
Spinal cord, perceptive power of, 467, 703.
  influence of on brain, 1104.
Spine, fracture of, 741.
Springs, mineral and thermal, 186, 394.
Statistics of mortality of United States, review of, 334.
  of operative midwifery, 1142.
Stellingia in diseases of skin, 1096.
Stephenson, Dr. J. G., on tobacco in erysipelas, 938.
Stevenson, J. L., M.D., use of croton oil in dropsy, 1087.
Stomach, softening of, 102.

Stomach and intestines, treatise on diseases of, by Habershon, review of, 236.
  cancer of, 512, 723.
  ulcer of, treatise on, by Brinton, review of, 1028.
  ulcer of, 1077.
Storer, H. R., M.D., on prolapse of vagina, 64.
  on criminal abortion, 1149.
Stout, Dr. A., necrological notice of, 197
Strabismus, subconjunctival operation for, 266.
Stramonium in convulsions, 941.
Strangulated hernia, 507.
Strecker, Dr., on sarkin, 1104.
Strong, P. H., M.D., on relation of anal fistula to phthisis, 371.
Strychnia in sciatica, 936.
  in sick headache, 946.
  antidote to, 1098, 1099, 1102.
Subjects in Vienna, 195.
Suits for mal-practice, 195, 389.
Sulphate of morphia in strychnia poisoning, 1099.
Supra-renal capsules, diseases of, 376, 530.
Surgery, report on by Hartshorne, 536, 732.
  contributions to by Carnochan, notice of, 656.
  lectures on by Geddings, notice of, 843.
  manual of by Von Bruns, notice of, 848.
  physiological after amputation, 1069.
Surgical cases, by A. Lopez, M.D., 1065.
Sutton, G., M.D., on epizootics, 483.
Swine, epizootic disease among, 483.
Syme, Prof. Jas., on escharotic treatment of cancer, 138.
Syphilis, primary, treatment of, 380.
  of bones and cartilages, hereditary, 749.
  iodide of potassium in, 1080.
Syphilitic retinitis, 380, 708.
  ulceration of larynx, 872.

TALIAFERRO, Dr., on veratrum viride, 918.
  on chlorate of potash in typhoid fever, 1088.
Tanner, T. H., M.D., manual of practical medicine by, notice of, 1036.
Tannic acid in sore nipples, 1097.
Tansy, oil of, poisonous properties of, 165.
Tartrate of antimony in colic, 945.
Temperature in patients, 1114.
Tessier, Prof., on prolonged constipation, 1113.
Testicle, fungus of, 103, 514.
Tetanus, traumatic, 552, 553.
Thermal springs, 188, 394.
Thigh-bone, fracture of neck of, 743.
Thomas, Prof. R. K., resignation of, 586.
Thompson, J. C., M.D., on nitric acid in intermittent fever, 1089.
Thornton, W. G., M.D., iodine in neuralgia, 1097.
Thrombosis, nature and treatment of, 414.
  of cerebral sinuses, 954.
Thumb, new method of reducing dislocation of, 749.
Thyroid body, cysts of, 880.
Tibia, exostosis of, 531.
  dislocation of head of, 752.
Tiedeman, H., M.D., on dysentery, 358, 1083.
Tobacco in erysipelas, 938.
Tonsils, excision of, 732.
Tourniquet, new form of by Gross, 540.
Toynbee, J., catalogue of preparations, notice of, 42.
Trachea, medication of, 78.
  foreign body in, tracheotomy, 734, 735, 736, 737.
Travers, Mr., necrological notice of, 590.
Trephining followed by apoplexy, 320.
Trismus nascentium, recovery from, 355.
Tricuspid valve, insufficiency of, 521.
Triple births, 969.
Tubercle of lung simulating cancer, 322.
  influence of pregnancy upon, 372.
  of kidney, 517.
  of peritonium and liver, 1076.
  influence of climate upon development of, 373.
Tuberculosis pulmonary, 1107.
Tuke, D. H., M.D., treatise on psycological medicine, review of, 826.
Tumor, bony, of scrotum, 79.
  encephaloid, of thigh, 78.
  cystic, on nates of fœtus, 313.
  erectile, of urethra, 509.
  fibro-fatty, of abdomen, 517.
  fibrous, of uterus, removed during labor, 527.

ULCER of the stomach, treatise on, by Brinton, review of, 1028.
  of stomach, 1077.
Ulceration, syphilitic, of larynx, 872.
Ulcers of tongue, larynx, and bronchia, 868.
Uræmic convulsions of pregnancy, &c., treatise on, by Braun, review of, 1020.
Urea, injection of into blood, 287.
Urethra, laceration of from muscular contraction, 154.
  erectile tumor of, 509.
Urinary calculus, 319, 324, 329, 725.

Urinary deposits, treatise on by Bird, review of, 785.
Uterus, polypus of removed by écraseur, 160.
  severance of neck of, during labor, 315.
  fibrous tumor of, removed during labor, 527.
  nervous centres of, 767.
  cancer of fundus and body of, 874.
  amputation of neck of in prolapsus, 951.
  linear écrasement of neck of, 952.
  chloro-iodide of mercury in engorgement of neck of, 952.
  carbonic acid douche in diseases of, 966.
  laudanum dressings in painful diseases of, 967.
  chlorate of potash injections in ulcerations of os uteri, 1081.
  rupture of, new symptom of, 1137.

VACCINE matter in smallpox, 1102.
Vagina, prolapse of, 64.
Valerianate of ammonia, 570, 934.
Valve, tri-cuspid, insufficiency of, 521.
Van Buren, W. H., M.D., on ligature of iliac artery, 549.
Van Tuyl, Dr. D. B., case of calculi and sequestrum in bladder, 754.
Ventilation, treatise on, by Reid, notice of, 1035.
Ventricles, communication between, 522.
Veratria in incontinence of urine, 937.
Veratrum viride, medicinal virtues of, 914.
  in aneurism, 544.
Vertebræ, cervical, fracture of, 315, 518.
Veterinary Journal, notice of, 586.
Virchow on thrombosis and embolia, 414.
  on pericarditis and acute fatty degeneration of heart, 1106.
Vogel, J., M.D., treatise on morbid anatomy by, review of, 1.
Vomiting of pregnancy, pepsin in, 965.
  nitrate of silver in, 1097.
Von Gutzeil, Dr., on carbuncle, 1117.

WALLACE, E., M.D., on fracture of skull with wound of brain, 75.
Walker, Dr. W. G., on veratrum viride, 919.
Walther, Dr., necrological notice of, 591.
Waring, T. S., M.D., editor of Geddings's lectures on surgery, 843.
Warts, removal of by chromic acid, 156.
Watson, Thos., M.D., treatise on principles and practice of physic, notice of, 653.
  Dr., on veratrum viride, 921.
Watters, J. H., M.D., essay on muscular motion by, notice of, 130.
Wedl, Carl, M.D., treatise on morbid anatomy by, review of, 1.
West, Chas., M.D., treatise on diseases of women by, review of, 593.
Whitaker, J., M.D., case of fracture of pelvis during pregnancy, 742.
Wible, B. M., M.D., on convulsions, 56.
Wilson's plates of diseases of skin, notice of, 466.
Witsell, C., M.D., on nitric acid in pertussis, 1082.
Wood, G. B., M.D., Dispensatory by, notice of, 465.
  treatise on practice of medicine by, notice of, 1036.
  Jas. R., M.D., on ligature of carotid artery, 541.
  E. P., M.D., on the use of gentiana quinqueflora, 1090.
Wunderlich, Prof., on temperature in patients, 1114.
Wythes, Joseph H., M.D., on infantile apoplexy, 70.

YELLOW fever, treatment of at Charity Hospital, 348.

ZINC, iodide of, in conjunctivitis, 1097.
  oxide of, in night-sweats, 1084.
  sulphate of, " " 1084.

41 C
921